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ARIZONA MEDICINE

Journal of

ARIZONA STATE MEDICAL ASSOCIATION

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Volume 3 *March, 1946* *Number 2*

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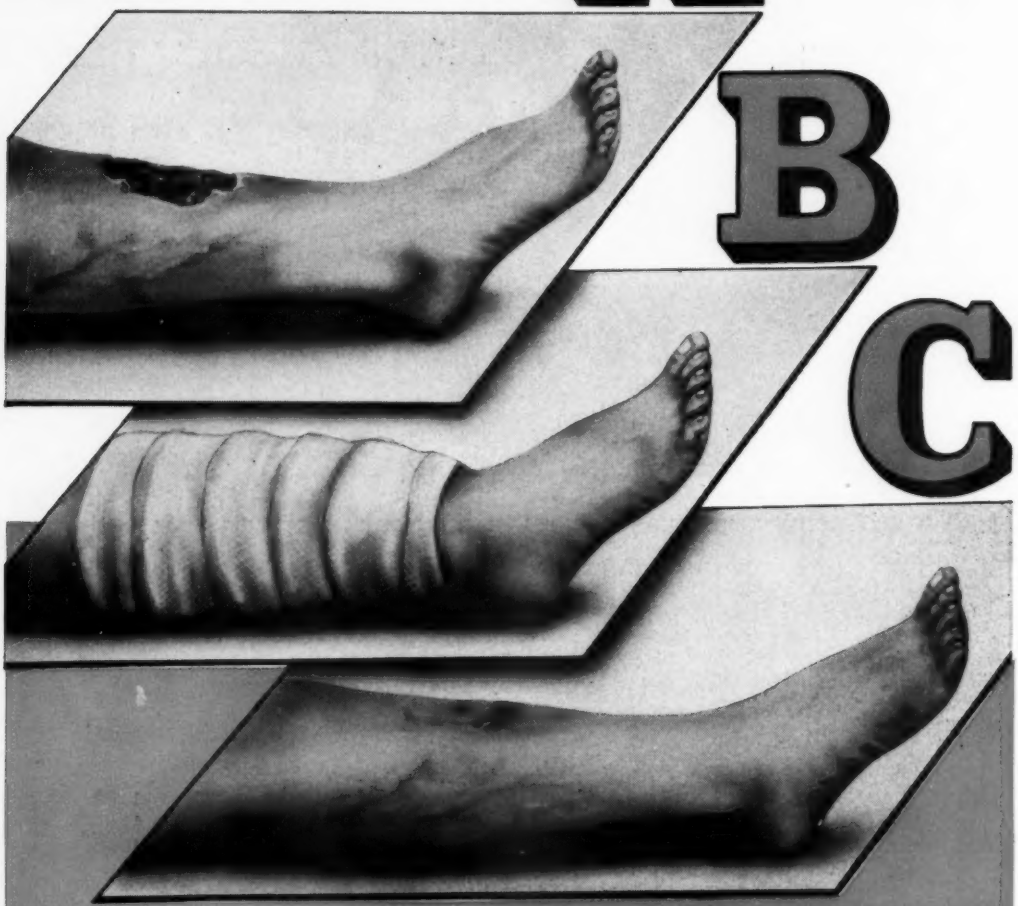

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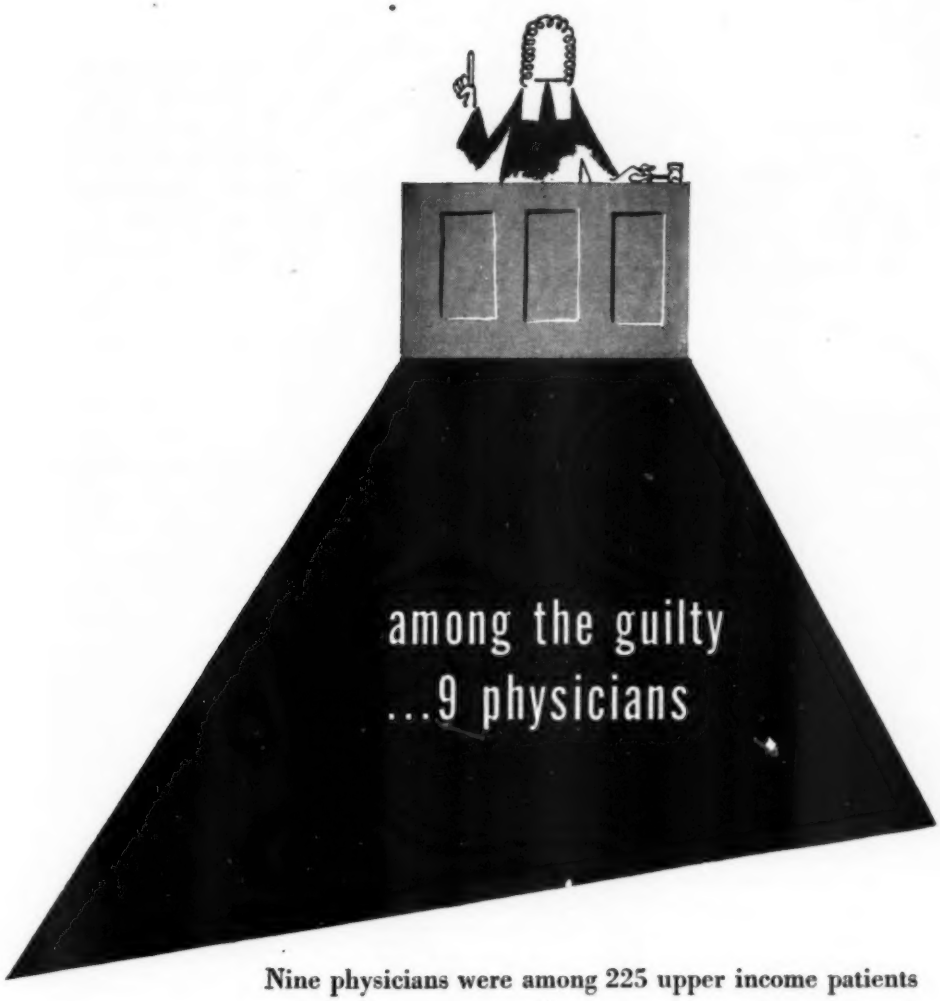

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1. New England J. Med. 228:118 (Jan. 28) 1943.
2. J. A. M. A. 127:613 (Oct. 27) 1945.

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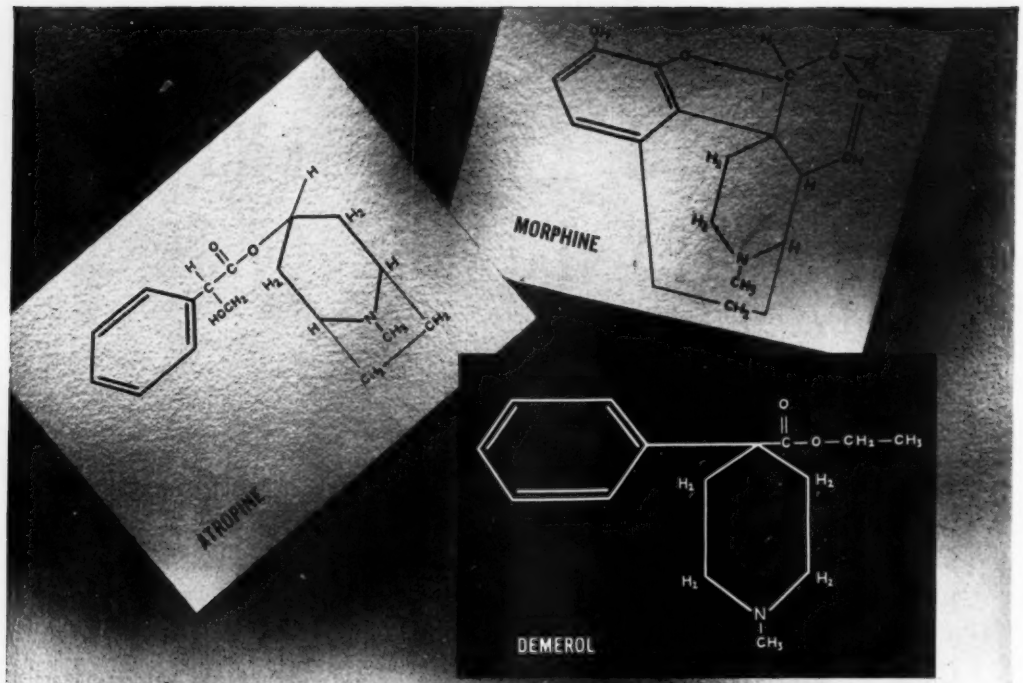

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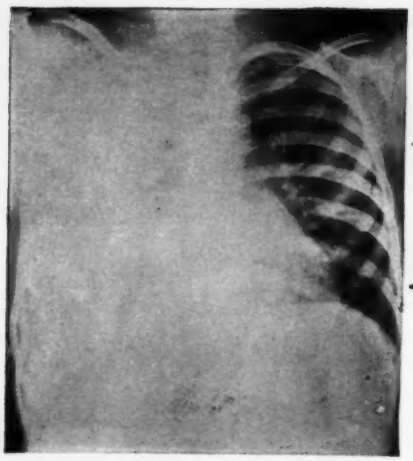
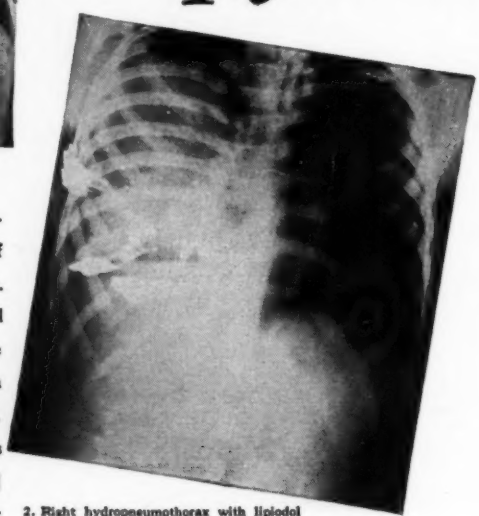


1 Right lobar pneumonia (type 1) and right empyema.

Penicillin in Empyema



2. Right hydropneumothorax with lipiodol injections showing interlobar empyema.

Size of cavity, type of infection, and number of organisms determine the amount of penicillin to be administered in empyema. Usually 50,000 or 100,000 units in normal physiologic saline solution are injected once or twice daily directly into the empyema cavity after aspiration of pus or fluid. (Keefer, C. S., et al.: New Dosage Forms of Penicillin, J.A.M.A. 128:1161 [Aug. 18] 1945.) Treatment is by instillation, rather than irrigation, because penicillin requires at least 6 to 8 hours of contact for maximum effect.

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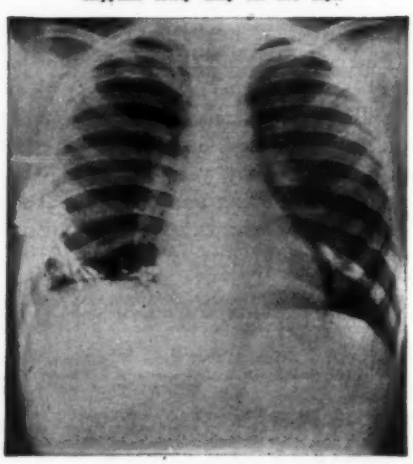
The rapidly developing new clinical uses of this potent antibiotic are abstracted in issues of the BRISTOL PENICILLIN DIGEST. If not receiving *your copies* regularly, write.

3. After injecting Penicillin in saline into empyema cavity daily for five days.



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*Davis, C. H.: Gonorrheal Arthritis Complicating Pregnancy Treated with Penicillin, Am. J. Obst. & Gynec. 50:215 (Aug.) 1945.

Hudson, G. S., and Rucker, M. P.: Gas Bacillus Infection of the Uterus Treated with Penicillin, Am. J. Obst. and Gynec. 50:452 (Oct.) 1945.

Woltz, J. H. E., and Zintel, H. A.: The Transmission of Penicillin to Amniotic Fluid and Fetal Blood in the Human, Am. J. Obst. & Gynec. 50:338 (Sept.) 1945.

Mitchell, R. McN., and Kaminester, S.: Penicillin; Case Report of a Patient Who Recovered from Puerperal Sepsis Hemolytic Streptococcic Septicemia, Am. J. Surg. 63:136 (Jan.) 1944.

White, R. A.: Puerperal Sepsis Treated with Penicillin, Southern M. J. 37:524 (Sept.) 1944.

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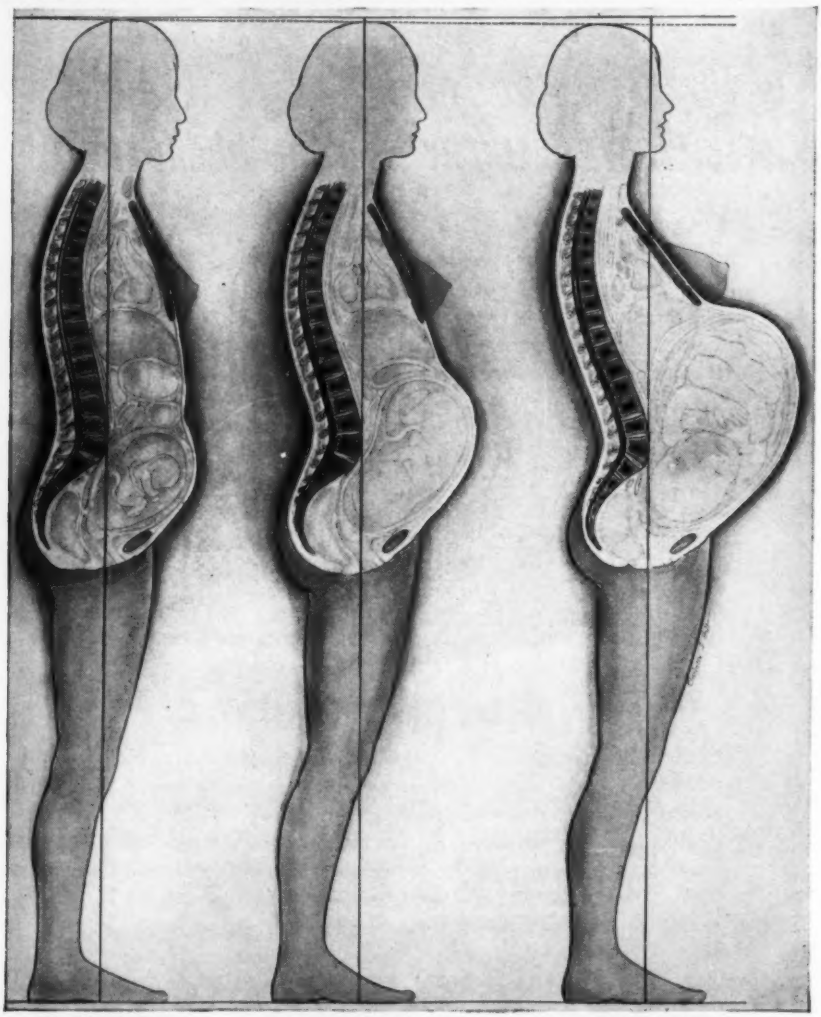
BODY MECHANICS OF PREGNANCY

• STUDIES FROM LIFE MODELS DURING PREGNANCY • Illustration by Charlotte S. Holt



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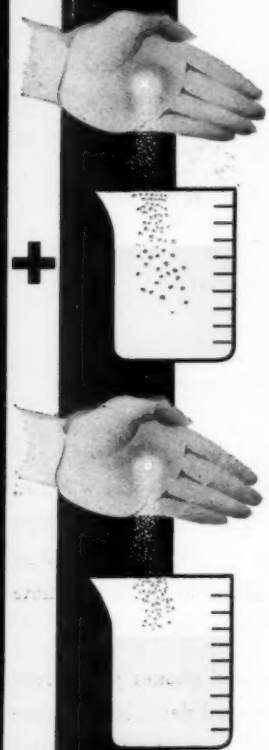

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1. Lehr, D.: Proc. Soc. Exper. Biol. & Med. *58*:11, 1945.
2. Lehr, D.: In press.

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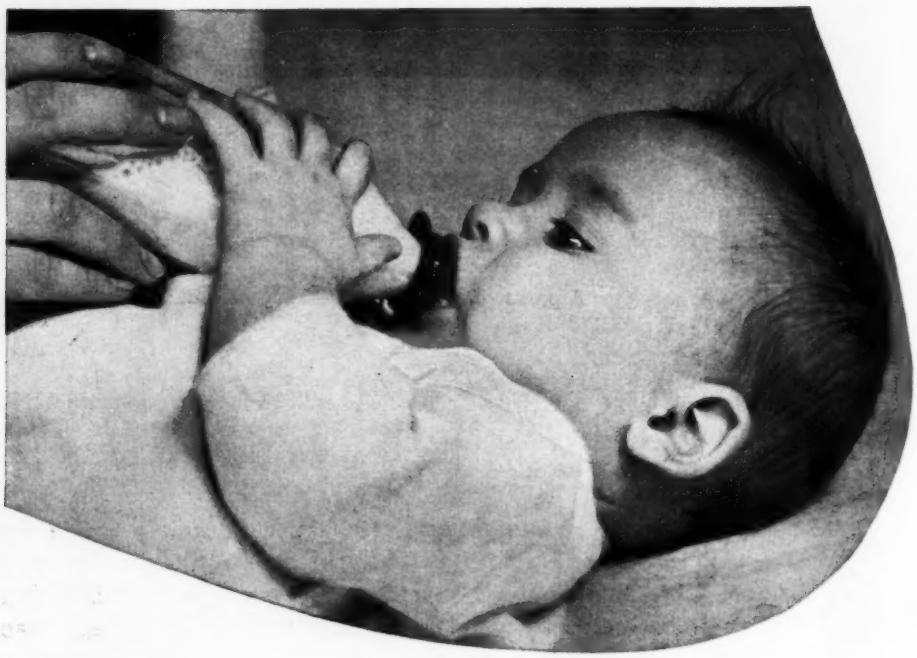

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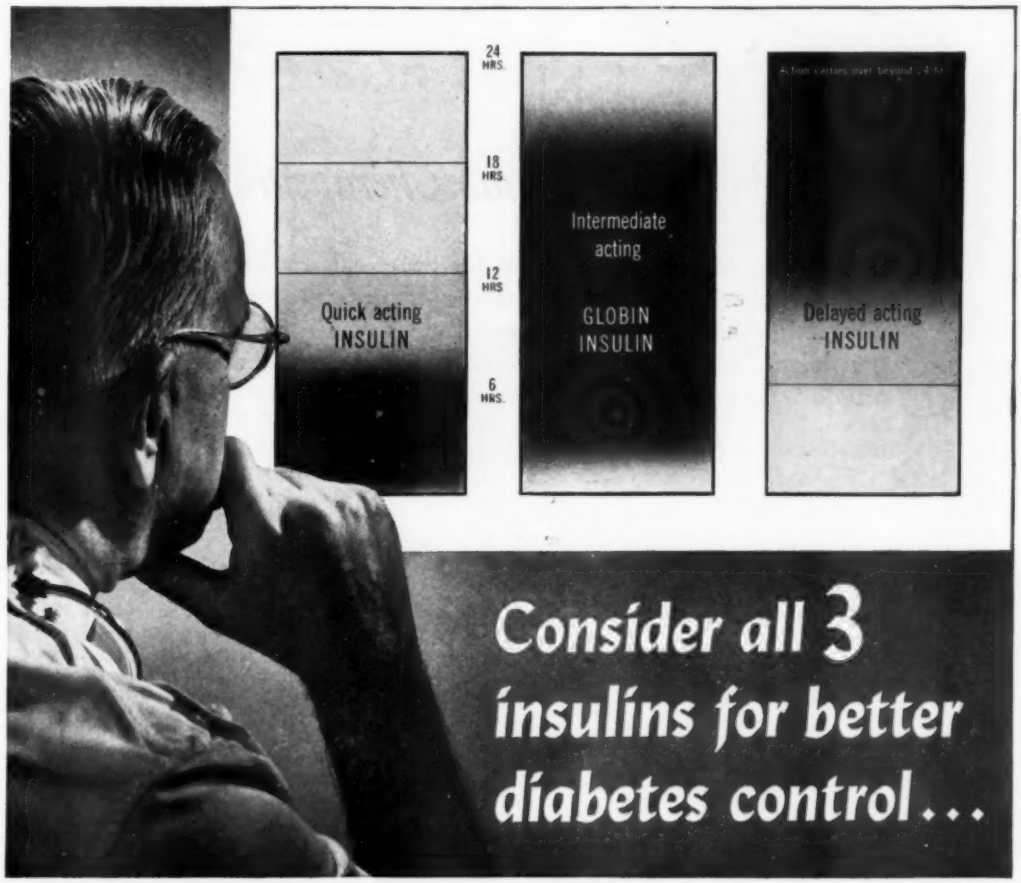

THE physician now has three types of insulin available to treat diabetes. One is quick-acting but short-lived. Another is slow-acting but long-lived. The new third one—'Wellcome' Globin Insulin with Zinc—is intermediate.

Action with Globin Insulin begins moderately quickly and persists for sixteen or more hours, sufficient to cover the period of maximum carbohydrate intake. By night, activity is sufficiently diminished so that the likelihood of nocturnal reactions is minimized. A single injection daily of 'Wellcome' Globin Insulin with Zinc will control the hyperglycemia of many diabetics. When a diabetic requires insulin therapy, the physician is wise to consider all *three* insulin types.

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"There are many opportunities for practical dietary application of the advances in our understanding of protein economy. The provision of liberal protein diets in instances where the value of protein has been demonstrated offers both prophylactic and therapeutic advantages to the patient."

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"Protein is one of the essentials for which there is greater need.... The growth needs of the fetus must be met and if adequate dietary protein is not supplied, the mother's protein stores will be drained.... The demands for protein during lactation are even greater.... One further reason for providing a liberal supply of protein... lies in the favorable effect which protein has upon calcium absorption."

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"... actual improvement in the well-being of nephritic patients may be observed following the use of high-protein diets both in adults and children. In some instances functional capacity of the kidneys has been reported to improve on such a regime.... For the treatment of nephrosis the same dictum holds true, only to a greater extent...."

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"For many years carbohydrate alone has been considered the one substance capable of providing protection for the liver cells. ... Protein has now been shown to be considerably more effective in this respect. ... The effect of protein on the liver is not only reparative, but also definitely protective against the agents known to be toxic to the liver...."

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"... a rather high incidence of moderate hypoproteinemia in peptic ulcer cases has been reported. Any ulcer, be it peptic, infectious, or the result of pressure and circulatory changes, represents a loss of tissue and requires protein for rebuilding...."

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"In old age, for instance, all too often the food intake deteriorates to soft foods of limited variety.... Yet in such instances the same protein requirements for maintenance of the numerous body functions are still in effect.... Protein may also be lost because of its excessive breakdown under the influence of fever or heightened body metabolism, and negative nitrogen balances may develop, as for instance in hyperthyroidism....

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Among the protein foods of man meat ranks high not only because of the percentage of protein contained, but primarily because the protein of meat is of high biologic quality, applicable for every protein need.

*Anderson, Geo. K., M.D.: *The Importance of Protein in Diet Therapy*, J. Am. Dietet. A. 21:436 (July-August) 1945.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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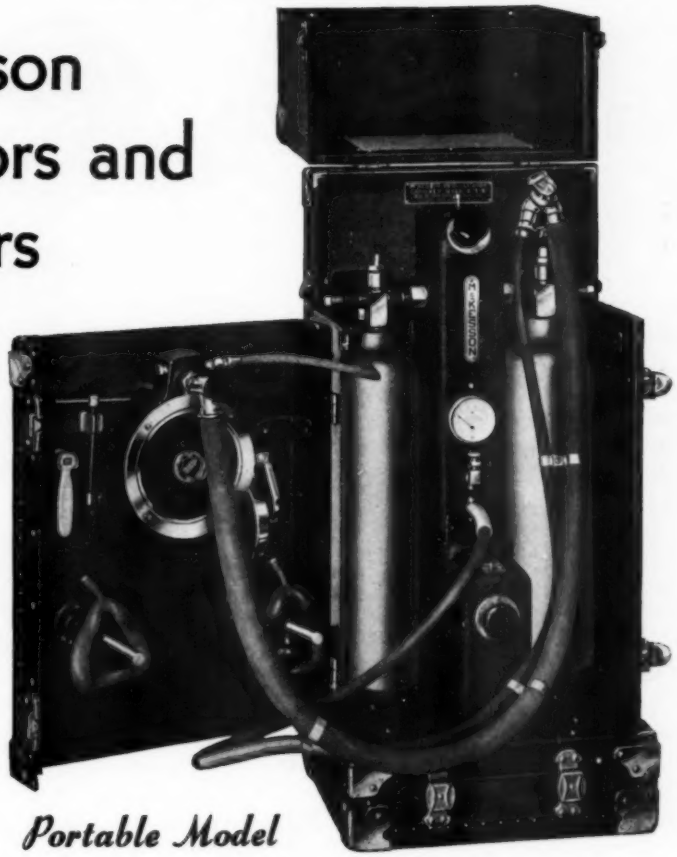

Portable Model

Any of these instruments may be operated by hospital personnel with assured safety. Fool-proof, built-in safety features guard against misuse in any department of the hospital.

When the mask is applied to the patient's face and the resuscitation mechanism is set in motion, a natural, rhythmic, controlled breathing takes place. The lung is inflated with oxygen and ventilated under constant gentle pressure. There is no actual vacuum on lung tissue at any time.

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The only apparatus of its kind which has adjustable volume. This important feature permits the operator to conserve precious gas on long cases. Adult operation introduces approximately 1200 cc oxygen or oxygen-Carbon dioxide mixture into the lung and removes approximately 900 cc. With control set for "infant" it introduces approximately 300 cc into the lung and removes approximately 150 cc.

Adjustable Pressure Control

Limit of the pressure used may be varied from 1 to 19 mm Hg pressure at mask exhaling valve. A special pressure relief valve is built inside the unit to prevent operator from going beyond these limits. Maximum pressure limits may be reduced if so desired.

Adjustable speed control

Speed of controlled respiration may be changed at will by the operator by the use of one single control knob.

Inhaler

There is a single lever at mask provided to switch from resuscitation to automatic inhalation when the patient starts voluntary respiration. Inhaler delivers oxygen or mixtures to the patient automatically with each breath assuring adequate delivery and ventilation.

Aspirator

Any unit may be ordered equipped with continuous suction attachment which is ready for use at all times.

Cylinders

All units designed to accommodate two cylinders. Either pure oxygen or oxygen-carbon dioxide mixtures may be used. (Price of unit does not include cylinders and gas.)

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Some people call this man "fussy"

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CATARACT EXTRACTION

PAUL HENRY CASE, M. D.
Phoenix, Arizona

TO those whose conception of cataracts and cataract surgery bring memories of having been told that cataracts had to "ripen" and that when surgery was done the patient was required to lay flat on his back for seven days witout moving his head, present day methods are quite startling.

Often, instead of being told that the cataracts had to ripen, the patient was told that he had to go blind before the cataracts could be removed. This was the terminology used to describe to the patient the necessity of allowing the cataract to become mature before surgery.

These factors also have been the cause of phobias in the mind of the layman with regard to cataracts. Thus it is that as an ophthalmologist I find a supernatural fear in the mind of the patient whenever the word cataract is mentioned. The first question asked by patients after eye examination is whether or not they have a cataract, because in their minds too many of them still associate cataracts and blindness. More than one ophthalmologist has told patients they had cataracts, and shortly afterward heard the patient had committed suicide. When the public is properly educated, much of this fear should be allayed.

In past years it was the custom to wait until the cataract was mature because of the method of extraction followed. This was the so-called "Extra-capsular" extraction. In brief, the procedure followed was to remove part of the anterior capsule, deliver the lens nucleus, and then wash out the remaining lens substance, leaving the posterior lens capsule. This procedure was impossible with an immature cataract.

The newer method of cataract operation is called the "Intra-capsular" extraction. By this method, the lens is removed with its capsule intact, thereby removing the entire lens and giving a perfectly clear pupil. The lens capsule may be grasped below with a delicate forceps and tumbled out or it may be grasped above and slid out. I find that there is less chance of the capsule breaking with the latter method, which method I use routinely. Rupture of the capsule is not too serious a complication in the operation, and if due caution is taken and proper skill is exercised, this rarely occurs. The contra-indication to "intra-capsular" extraction is in protruding eyes where it is felt that there is a tendency for the vitreous to bulge. The particular advantage of the "intra-capsular" method is that the lens may be removed when immature, thus eliminating the necessity of waiting until the lens is mature, at which period the vision in the eye is reduced to light perception. This is not so important if the patient has a unilateral cataract with good vision in the other eye but is very important if the condition is bilateral. My advise to patients is to wait until the cataracts are advanced to the point where they can no longer carry on an enjoyable or active life, and then I advise operation. This is usually when the vision is reduced to 20/100 or 20/200.

The other great advancement in cataract surgery is the use of sutures to close the wound following operation. Formerly no attempt was made to suture the wound, which necessitated the patient lying flat on his back for seven days while the wound healed. If cooperation was not good on the patient's part, and the patient moved his head or strained often, the wound broke open and vitreous was lost — frequently resulting in failure of the operation, and occassionally in the loss of the eye.

In brief, the method of suturing the wound is to place two initial tract sutures of black silk through the sclera and cornea at the limbus and approximately on half the depth of the tissues at 11 and 1 o'clock. The routine incision is then made through the limbus, severing the initial sutures in half. The original suture tracts are then rethreaded using the cut ends of the original sutures as guides. After rethreading, the sutures can be pulled up snugly

Read before Maricopa County Medical Society December 1945.

closing the wound firmly after the lens has been removed.

When these sutures have been used, the wound is so tightly closed, that the frequent complications of post operative hemorrhage and prolapsed iris are practically non existent. A further advantage of these sutures is that less astigmatism is found post operatively due to the perfect closure of the wound.

Another great advantage of these sutures is that the patient is able to sit up in bed immediately after operation without any danger of the wound opening and subsequent complications. This is not only advantageous in making the operation many times safer but also has the advantage of eliminating the hypostatic pneumonia which sometimes occurs when elderly people lie for a week flat on their back. It also means that patients who have asthma and other chest conditions where coughing is frequent may now be operated with relative safety.

Some surgeons have complained that putting in the sutures causes more manipulating and thus more danger of infection. This is of a hypothetical nature, and my experience has proven that with sutures there is no higher percentage of post-operative infection. Post-operative infections are either of endogenous or exogenous nature. Certainly the use of sutures will not increase endogenous infections. Rather, a careful pre-operative check-up of the teeth and other points of focal infection is indicated to prevent this complication. Careful sterilization and aseptic technique will prevent exogenous infections. When the rare infection does occur, we are fortunate to now have at our disposal penicillin and the sulfa drugs which greatly reduce the severity of these infections. Another comment regarding sutures has been made to this effect; "They sound good, but they take too much time and are too much trouble to put in and rethread." The extra time required is often advantageous. During the first few minutes of the operation the patient is fearful and likely to be restless, but later he becomes more accustomed to the manipulation of the operator. Thus during the latter part of the operation, when the lens is being delivered, he gives better cooperation. Rethreading the sutures is not difficult if done properly. The needle holder should be held as one does a pen or pencil to give better relaxation of the hand. Resting the hand on the side of the face also allows relaxation. When one is rethreading the tract, particular care should be taken to see that the needle is exactly parallel to the direction of the tract. If these measures are followed, with a little practice rethreading is not difficult.

General anesthesia in cataract surgery was out of the question until the introduction of sodium penothal. The reason for this was that with previous anesthetics there was so much post-operative nausea and vomiting that they could not be used. However, with sodium penothal this is minimized and if sutures are used so the wound is tightly closed, in case vomiting does occur, the wound is still not apt to be opened. However, sodium penothal does not completely inhibit the cough reflex so that if the patient coughs during the operation the vitreous is so commonly lost that it constitutes a grave menace. Furthermore, cataract surgery is usually performed in elderly individuals at which age sodium penothal is considered more hazardous. It is my feeling that with the proper technique of using local anesthesia the patient has no pain and this is my method of choice. However, in an occasional case the contra-indications to sodium penothal may be outweighed by other factors as undue nervousness, etc., and in this case general anesthetic may be indicated.

It is hoped that as the medical profession becomes cognizant of and the layman is educated to these newer methods there will no longer be the morbid fear of cataracts that has been harboured in the past.

15 East Monroe

SECTION ONE

CONJUGATION OF SULFONAMIDES IN THE INTESTINAL TRACT OF MAN*

From the Departments of Bacteriology and Medicine, University of Southern California School of Medicine, and from the Los Angeles County Hospita

With the technical assistance of N. Homann and M. Lovell

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ALTHOUGH the fate[1] of orally administered sulfonamides has widely been investigated, no quantitative studies have been made upon the possible conjugation of these drugs within the intestinal tract of man. In the present communication are cited data on this subject obtained from the oral administration of sulfonamides in a single dose to human volunteers and the estimation of free and conjugated drug in the urine and feces during a five-day period thereafter.

METHODS

Three groups of four or five normal male medical students received a single oral dose of 3 grams of uncoated sulfadiazine or of 4-hour or 8-hour Seal-Ins** enteric-coated sulfadiazine. Similiar groups received uncoated or similarly coated sulfathiazole or uncoated sulfamerazine or sulfaguanidine, each in a single dose of 3 grams orally. The coatings used in this study were designed to liberate the enclosed drug in approximately the indicated length of time following ingestion. All of the urine and feces of each individual were collected daily for a period of five days and examined for free and combined sulfonamide according to the modified methods of Bratton and Marshall[2]. The term "free sulfonamide" in this paper is taken to indicate sulfonamide giving a positive diazo reaction without resorting to hydrolysis and "combined sulfonamide" to indicate material giving a positive diazo reaction only after hydrolysis.

RESULTS

Table I indicates the urinary and fecal excretion of sulfadiazine during each of the five days and for the five-day period and also indicates the percentage which appeared in the conjugated form in the urine or feces each day.

It is noted that the proportion of ingested drug which was excreted in the urine or stool of the three groups of individuals differed markedly, depending on whether the drug was uncoated or was coated with the 4-hour or 8-hour enteric coating, and also differed markedly from day to day. In spite of these variations in absolute amounts excreted, however, the percentage of total urinary sulfadiazine excreted in the conjugated form tended to remain a constant with an average value of approximately 38%, the extremes being 29% to 51%. The percentage of fecal sulfadiazine which was excreted in the conjugated form also tended to remain essentially constant with an average value of approximately 20%, the extremes being 14% to 39%. It is also apparent that the amount of conjugated sulfonamide appearing in the feces bore no relationship to the amount of free or conjugated material appearing in the urine on the same or any preceding or subsequent day in the same group of individuals, but that the amount of conjugated sulfadiazine appearing in the stool was closely and almost constantly related to the total amount of sulfadiazine in the stool on the same day, regardless of whether this latter value was small or large and regardless of whether the individual had received uncoated or enteric-coated drug.

In Table II are shown the average percentages conjugated in the urine and feces of individuals receiving coated or uncoated sulfathiazole, sulfamerazine, and sulfaguanidine. In each of the five groups represented by these figures it was noted that the percentage conjugation in stool tended to remain a constant, to be a function of the total sulfonamide

*The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the University of Southern California and was aided in part by a grant from the Weingarten Fund of the University of Southern California School of Medicine.

**Furnished by the Seal-Ins Laboratories, Los Angeles.

Presented at Meeting of the Arizona State Medical Society, Phoenix, April 30, 1944.

in the stool, and to be unrelated to the free or total drug excreted in the urine on the same or any other day.

DISCUSSION

These observations have indicated that the amount of conjugated sulfadiazine in the stool was a function of the total amount of sulfadiazine in the stool on the same day and was not a function of the amount of free or conjugated sulfadiazine excreted in the urine on the same or any other day. It is therefore apparent that the conjugated sulfadiazine appearing in the stool must have been formed within the intestinal tract.

The use of enteric-coated sulfonamide in this study is a matter of further interest because it permits an estimate of the portion of the bowel in which the majority of this conjugation must have occurred. Since the results obtained with the uncoated and with the 4- and 8-hour coated sulfadiazine were similiar, and since these enteric-coated tablets probably passed unchanged throughout the majority or all of the small intestine, breaking down only after such a period of time as must have assured their arrivel in the cecum or lower portion of the bowel, it seems almost certain that conjugation of the sulfadiazine must have occurred largely below the ileocecal valve.

Table I

Percentage acetylation of sulfadiazine in urine and stool of normal men receiving a single dose of uncoated or 4-hour or 8-hour Seal-Ins enteric-coated sulfadiazine.

		Urine			Stool		
	Day	Total Sdi(mg)	Conjugated Mg	Sdi %	Total Sdi(mg)	Conjugated Mg	Sdi %
Sdi-0	1	1303.3	375.6	28.8	118.1	18.8	15.9
	2	848.9	334.5	39.4	293.1	67.3	23.0
	3	220.6	89.5	40.6	21.0	4.5	21.4
	4	64.7	33.0	51.0	29.6	6.9	23.3
	5	20.0	9.6	48.0	0.6	0.1	16.7
	1-5	2457.5	842.2	41.6	462.4	97.6	20.1
Sdi-4	1	459.5	135.2	29.4	158.1	38.6	24.4
	2	566.5	218.7	38.6	1215.6	170.5	14.0
	3	160.2	57.0	35.6	92.5	36.0	38.7
	4	37.9	18.9	49.9	11.3	1.9	16.8
	5	16.7	6.1	36.5	0.0	0.0	
	1-5	1240.9	436.0	38.0	1477.6	246.9	24.0
Sdi-8	1	7.2	2.4	33.3	322.0	56.6	17.8
	2	142.7	50.3	29.1	1531.5	254.4	16.6
	3	159.9	57.1	35.7	409.2	67.4	16.5
	4	56.0	20.1	35.9	15.1	2.1	13.9
	5	27.6	11.1	40.2	0.0	0.0	
	1-5	393.4	141.0	33.8	2277.8	380.5	16.2

Table II

Percentage of total sulfonamide in urine or stool which was in the conjugated form, based on normal human volunteers receiving a single oral dose of 3 grams.

Sulfonamide	Average % Conjugated In Urine	In stool
Sulfathiazole*	21	13
Sulfamerazine	58	17
Sulfaguanidine	36	10

*Includes results with both uncoated and enteric-coated drugs.

Similar results with uncoated and enteric-coated sulfathiazole and with uncoated sulfamerazine and sulfaguanidine indicated that a similar conjugation of the free drug occurred within the intestinal tract. It therefore appears that the observed conjugation of sulfadiazine is illustrative of a process which may possibly occur with any sulfonamide.

Further studies would be required to indicate the chemical nature of the conjugated sulfadiazine formed within the intestinal tract and the extent to which bacterial action might have brought about such conjugation. If it is shown that this observed conjugation is a result of bacterial action, it is not impossible that such action may be related to the resistance of certain bacteria to the antibiotic action of sulfonamides, particularly in the case of resistant organisms which cannot be shown to produce sulfonamide inhibitors and to require such inhibitors for their metabolism.

CONCLUSIONS

1. Sulfadiazine, sulfathiazole, sulfamerazine, and sulfaguanidine appear to be conjugated within the gastrointestinal tract of man.

2. The majority of this conjugation probably occurs within the large bowel.

3. The chemical nature of the conjugation has not been determined.

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SECTION TWO

FACTORS DETERMINING THE HYDROLYSIS OF SULFASUXIDINE AND SULFATHALIDINE

SULFASUXIDINE (succinylsulfathiazole) and sulfathalidine (phthalylsulfathiazole) have been suggested as antibiotic agents for use within the intestinal tract.[1,2,3,4,5] These two compounds are essentially inert as such but tend to hydrolyze with the consequent liberation of free sulfathiazole. Absorbtion of the conjugated drug from the bowel is minimal, but ap-

preciable amounts of free drug are liberated within the large intestine. It it this free and active sulfathiazole which is thought to be responsible for an observed reduction in the number of coliform organisms. Adequate studies have not been reported, however, upon the rate of hydrolysis of either drug under experimental conditions, and the following studies were therefore made upon the spontaneous hydrolysis of these drugs.

METHODS

Phosphate buffer solutions were prepared having pH values of 6, 7, and 8. Stools were collected from several untreated individuals and were pooled with the entire intestinal contents of an untreated patient coming to autopsy. This mixture was made up to a concentration of 40% with water, and was then diluted with buffer solution to make a 20% stool solution (mixture "a"). A second group of stools was similarly mixed with intestinal contents (mixture "b"). Succinylsulfathiazole was added to these various mixtures, solution being aided by a mechanical mixer. Determinations of free and total drug were made in duplicate at least. The entire intestinal contents of several autopsies (mixture "c") were similarly used with sulfathalidine.

To determine solubility, a marked excess of sulfasuxidine was added to stool and to buffer solutions at 37° and at 4° C., and the concentration of conjugated drug in the supernatant solution was determined after 24 hours. Solubility of sulfathalidine was noted only in buffer at 37° C.

RESULTS

Results of solubility studies are noted in Table I. It is apparent that the solubility of sulfasuxidine was greater in stool than in buffer solutions, that it differed in the two stool solutions, though being of the same order, and that it was increased by heat and by alkalinity. Allowing for a greater individual variation between the stools of patients than has been demonstrated between these two fecal pools, the solubility of succinylsulfathiazole at 37° C. might be expected to range from 250 to 800 milligrams percent in the bowel. Sulfathalidine was somewhat less soluble than sulfasuxidine in buffer solution.

Table I

Solubility of Sulfathalidine in Buffer Solution at 37° C. and of Sulfasuxidine in 20% Buffered Stool Solution and in Buffer Solution at 4 and 37° C., Expressed as mg.%. Two stool solutions, (a) and (b), were examined at 37° C.

				pH 6	pH 7	pH 8
Sulfathalidine	37° C.	Buffer		41	188	513
Sulfasuxidine	37° C.	Buffer		106	424	644
	37° C.	Stool	(a)	287	584	750
			(b)	298	514	716
	4° C.	Buffer		62	247	500
	4° C.	Stool	(b)	162	345	492

Table II

Effect of Concentraton (mg.% and % Saturate) of Succinylsulfathiazole and Phthalylsulfathiazole upon the Concentration (mg.%) of Free Sulfathiazole Developed from Them. Various concentrations were added to 20% stool solution and incubated at 37° C.

		Initial Concentration Succinylsulfathiazole or Phthalylsulfathiazole		Mg.% Free Sulfathiazole				
	pH	Mg.%	% Saturate	2 hr.	4 hr.	6 hr.	8 hr.	24 hr.
Succinyl-sulfathiazole	6	50	18.5	1	3	4	4	5
		150	52.2	2	5	5	7	12
		3300	100	10	14	19	20	32
	7	50	8.9	2	4	4	4	4
		250	44.3	4	5	9	9	18
		3300	100	13	18	20	23	37
	8	50	6.7	1	3	4	2	4
		350	46.7	5	7	9	9	20
		3300	100	12	18	21	23	46
Phthalyl-sulfathiazole	6	40	97.6	0	-	1	-	5
		1000	100	0	-	4	-	20
	7	40	21.3	0	-	2	-	6
		1000	100	20	-	24	-	39
	8	40	7.8	0	-	3	-	4
		1000	100	11	-	17	-	36

Succinylsulfathiazole was added to stool solution (a) to make concentrations of 50 and 3,300 mg.% at each pH, and concentrations of 150, 250, and 350 mg.% at pH 6, 7, and 8, respectively. Determinations of free sulfathiazole were made at various intervals, the solutions being stored at 37° C. Similar studies were made with sulfathalidine in concentrations of 40 and 1,000 mg.%. Results are shown for the first 24 hours in Table II. Similar observations were continued with both compounds over a period of 14 days, and the amounts of free sulfathiazole formed from the two drugs appeared to be of the same order at all tested time intervals.

Table III indicates the effects of acidity upon the rate of hydrolysis of succinylsulfathiazole in a 20% stool solution (a) at 37° C. Supersaturate solutions were used, and the amount hydrolyzed out of the total in solution was calculated. It is seen, as expected, that hydrolysis was more rapid in acid than in alkaline solution, approximately twice as great a proportion being hydrolyzed at pH 6 as at pH 8.

In solutions buffered at pH 6, 7, and 8 containing 200 mg.% succinylsulfathiazole, no hydrolysis occured at either 4° or 37° C. during a period of 14 days. In stool solution (b) simi-

larly studied, no free sulfathiazole was detected during the first 10 days at 4° C., but by 14 days small amounts were present at each pH. In stool solution at 37° C., however, appreciable hydrolysis occurred within 4 hours, 19 to 40% having been hydrolyzed within 14 days, as noted in Table IV. Marked differences in the rate of hydrolysis therefore appeared between stool and buffer solutions. Similar studies carried out with sulfathalidine in stool and buffer solutions at 37° C. indicated that this compound was similarly broken down much more rapidly in stool solutions than in simple buffer solutions at the same pH.

The rate of hydrolysis of sulfasuxidine during the first 24 hours has been compared in the two stool solutions, (a) and (b). During the first 4 hours, hydrolysis occurred more rapidly in solution (a), but by the end of 24 hours, the percentages hydrolyzed in (a) and (b) were essentially the same. The rate of hydrolysis in (a) therefore rose more quickly but tended to level off sooner than in (b).

Table III

Effect of pH on the Rate of Hydrolysis of Succinylsulfathiazole in a 20% Stool Mixture at 37° C. Figures indicate the percentage hydrolyzed at various numbers of hours, and are based upon the amount dissolved in the supersaturate solution used.

	Percent of Amount in Solution which was Hydrolyzed in:				
	2 hr.	4 hr.	6 hr.	8 hr.	24 hr.
pH 6	5	7	9	10	15
pH 7	3	4	5	6	9
pH 8	2	3	4	4	8

Table IV

"Spontaneous" Hydrolysis of 200 Mg.% Sulfasuxidine at 37° C. in 20% Stool Mixture Buffered at pH 6, 7, and 8. Figures indicate percentage of total drug which had been spontaneously hydrolyzed at various periods of time.

	Hours					Days					
	2	4	8	16	24	2	3	4	8	10	14
pH 6	0	4	6	11	14	22	24	27	31	37	40
pH 7	0	3	5	9	12	16	18	20	17	19	21
pH 8	0	3	4	7	9	11	11	12	12	15	19

CONCLUSIONS

1. The most important factor determining the rate of spontaneous hydrolysis of sulfasuxidine and sulfathalidine is the presence of some constituent of intestinal contents. Other factors are time, the concentration of conjugated drug if less than saturate, acidity, and temperature.

2. Sulfasuxidine and sulfathalidine appear to hydrolyze at approximately the same rate.

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SECTION THREE

ESTIMATION OF SULFASUXIDINE AND SULFATHALIDINE

SULFASUXIDINE (succinylsulfathiazole) and sulfathalidine (phthalylsulfathiazole) have been suggested as intestinal antibiotics.[1,2,3,4,5] Early in our work with these compounds we found that methods commonly used for the estimation of sulfonamides[6,7] sometimes failed to give adequate recoveries of sulfathiazole from sulfasuxidine and sometimes gave discrepant results in duplicate determinations of free sulfathiazole in the presence of sulfathalidine.

Experiment 1. Failure to secure quantitative recovery of sulfathiazole from succinylsulfathiazole. Succinylsulfathiazole, acetylsulfadiazine, sulfadiazine, sulfathiazole, sulfapyridine, and sulfaguanidine were all prepared in concentrations of 0.5 mg.% in 2.7% trichloroacetic acid. Three cc. amounts of these standard solutions were boiled for various periods of time either without the addition of hydrochloric acid or with the addition of 0.5 cc. of either 1.2 or 4 N HCl. In terms of added hydrochloric acid, the latter two solutions had final normalities of 0.17 and 0.57, corresponding very roughly with the final normalities recommended by Bratton and Marshall[6] and by Marshall[7]. Boiling was conducted in a waterbath, and the tubes were allowed to evaporate at will, the volume being restored every 30 minutes. Following hydrolysis for various periods of time, a determination of diazotizable substance was made by the methods of Bratton and Marshall, all determinations being made in duplicate at least. Readings were made on a Klett photoelectric colorimeter. Nitrogen determinations indicated that the succinylsulfathiazole was 98% pure. The results are shown in Table I. The yield of free sulfonamide from sulfasuxidine was inferior to that obtained from acetylsulfadiazine. This inferior yield

could not be entirely attributed to the loss of free sulfathiazole which may have occurred during the period of hydrolysis.

It was concluded from these observations that the methods suitable for acetylated sulfonamides were not suitable for succinylsulfathiazole and that this failure could not be entirely attributed to destruction of the free drug during hydrolysis.

It seemed possible that this failure was due to the inconstancy of volume during boiling. Multiple tubes containing 3 cc. of a standard succinylsulfathiazole solution were acidified with 0.5 cc. of 4 N HCl. In one set of tubes the original volume of 3.5 cc. was allowed to evaporate at will, being restored to 3 cc. every 30 minutes; in a second set the original volume was diluted to 5 cc., this volume being restored every 30 minutes; and in a third set the original volume of 3.5 cc. was held virtually constant by means of a glass bubble acting as a condenser. Results are shown in Table II. Essentially quantitive recovery was obtained when the solution was held at a constant volume and boiled for 90 minutes. In similar experiments with weaker hydrochloric acid, the recoveries were uniformly inferior to those with the stronger acid.

Similar studies have been made with sulfathalidine. The best yields of sulfathiazole were obtained when boiling was carried out in constant volume with the stronger acid for a period of 60 minutes.

Table I

Percentage Recovery of Free Sulfonamide after Exposing Various Sulfonamides to Procedures Used in Hydrolysis. Figures indicate percentage recovery after boiling for various numbers of minutes following the addition of 0.5 cc. of 1.2 or 4 N hydrochloric acid to 3 cc. of solution containing 0.5 mg% of drug in 2.7% trichloroacetic acid, or without the addition of hydrochloric acid.

	Succinylsulfathiazole				
Minutes Boiled:	30	60	90	120	180
No added HCl	25	31	37	39	39
1.2 N HCl	46	63	73	79	84
4 N HCl	71	84	88	86	79

	Acetylsulfadiazine					Sulfadiazine				
Minutes Boiled:	30	60	90	120	180	30	60	90	120	180
No added HCl	42	42	40	40	37	98	81	64	46	37
1.2 N HCl	90	98	96	93	91	98	97	96	92	87
4 N HCl	100	98	95	92	88	97	97	96	94	89

	Sulfathiazole					Sulfapyridine				
Minutes Boiled:	30	60	90	120	180	30	60	90	120	180
No added HCl	100	98	95	86	81	93	85	76	70	66
1.2 N HCl	99	98	97	95	90	99	94	93	90	88
4 N HCl	99	98	95	95	87	98	92	91	87	87

	Sulfaguanidine				
Minutes Boiled:	30	60	90	120	180
No added HCl	99	97	94	87	76
1.2 N HCl	100	100	97	94	92
4 N HCl	99	98	95	93	89

Table II

Effect of Volume and Constancy of Volume on Hydrolysis of Sulfasuxidine. One-half cc. of 4 N HCl was added to 3 cc. of standard solution in all cases, and the solution boiled for various numbers of minutes. Figures represent percentage recovery of free sulfathiazole. "3 cc., variable"; made up to 3 cc. every 30 minutes. "5 cc., variable"; diluted to 5 cc. and made up to 5 cc. every 30 minutes. "3.5 cc., constant"; held approximately constant with glass bubbles acting as condensers.

	Succinylsulfathiazole				
Minutes Boiled:	30	60	90	120	180
3 cc., variable	71	84	88	86	81
5 cc., variable	71	87	92	92	83
3.5 cc., constant	86	95	96	94	90

Experiment 2. Spontaneous hydrolysis of phthalylsulfathiazole during procedures used to estimate free sulfathiazole. A series of experiments was conducted to determine the degree of hydrolysis of sulfathalidine under a variety of conditions encountered in the storage of samples or in the estimation of free sulfonamides. Solutions of sulfathalidine (50 mg.%) were prepared in 0.1 N NaOH, in phosphate buffer at pH 8.0, in neulral water, in 0.1 N HCl, and in 4% trichroloacetic acid (25 cc. of 20 mg.% trichloroacetic acid being added to 100 cc. of aqueous sulfathalidine, 50 mg.%). Two trichloroacetic acid preparations were studied, one being held at room temperature and the other in the icebox at 4° C. Tests were conducted to determine the concentration of free sulfathiazole at various intervals of time after preparation of the original solutions. The usual methods of Bratton and Marshall were used, great care being taken with regard to the constancy of technique and to the time required for each step of the test.

Results are indicated in Table III. It is noted that in the presence of trichloroacetic acid at room temperature, approximately 15% of the conjugated drug had spontaneously hydrolyzed within one hour, this figure rising to 53% in 4 hours and to 94% in 24 hours. Rapid hydrolysis in the presence of trichloroacetic acid was also observed at 4° C. In alkaline solutions inappreciable hydrolysis occurred at room temperature during the 24-hour period of observations.

Difficulties of this particular type have not been encountered with other sulfonamides studied in this laboratory. Sulfathiazole, sulfadiazine, sulfapyridine, and sulfaguanidine were added to blood samples and stored for a week in the refrigerator without change. Blood filtrates similarly stored showed a loss of less than 0.1%. Succinylsulfathiazole and sulfathiazole were added to 20% stool solutions buf-

Table III

Percentage Hydrolysis of Sulfathalidine (50 mg%) under various conditions.

Reagent	Temp.	% Hydrolyzed at Various Hours 0	1	2	4	6	24	48
0.1 N NaOH	Room	5.5	4.7	4.6	5.8	5.2	5.1	
PO_4 buffer (pH 8.0)	Room	2.9	3.7	4.5	4.8	4.8	4.8	
Neutral water	Room	3.6	8.2	8.2	8.9	10.1	15.4	
0.1 N HCl	Room	1.8	1.8	2.5	3.7	4.8	9.3	
CCl_3COOH*	Room	2.3	14.8	26.6	52.9	77.0	93.6	97.0
CCl_3COOH*	4° C.	4.8	13.1	18.2	23.7	30.5	63.0	

*Concentration equal to that used in standard preparation of filtrates.

fered at pH 6, 7, and 8 and to similar plain buffers and stored at 4° and 37° C.: there was no apparent loss in any sample during a period of 14 days.

Special precautions are therefore required with sulfathalidine. It seems imperative that samples be immediately alkalinized with sodium hydroxide until such time as chemical examination can be conducted. It is equally imperative that the period from addition of trichloroacetic acid to addition of nitrate be not only reduced to a minimum but also be held rigidly constant. In all studies with this drug we have used a time of 13 minutes for the preparation of the filtrate. During this interval it appears that less than 5% of the total sulfathalidine may break down to free sulfathiazole at room temperature.

CONCLUSIONS

1. Inadequate recoveries of sulfathiazole are obtained from sulfasuxidine when the customary methods of hydrolysis are used.

2. Reasonably adequate results are obtained if the volume of solution is held constant during boiling and if hydrolysis is carried out for a period of 90 minutes.

3. Essentially quantitive recoveries of sulfathiazole may be obtained from sulfathalidine if evaporation is prevented during hydrolysis and if this is carried out for a period of 60 minutes.

4. Sulfathalidine tends to break down significantly or markedly during the preparation of trichloroacetic acid filtrates. Unless suggested precautions are taken, it is therefore possible that high concentrations of free sulfathiazole may be erroneously reported.

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SUBACUTE BACTERIAL ENDOCARDITIS WITH CASE REPORT

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CASE REPORT

The patient, a 21 year old, white female, wife of a meat cutter, lived in the northern part of Arizona. Past history revealed the following diseases: typhoid, measles, and poliomyelitis without any noticeable deformity in childhood, and probable influenza four years previous to present complaint. The patient had had one pregnancy with normal delivery two years previously. She was considered to be in good physical health until mid-October of 1944. At this time she developed sore and swollen, red ankles which lasted for about one week. After clearing for approximately one week, this condition returned with the pain and swelling traveling from joint to joint all over the body. This was accompanied with fever and the condition persisted until April 28, 1945. During the latter part of 1944 she was treated with gold therapy for arthritis with no improvement. She gradually lost weight, became weak and easily fatigued. At no time was she put to bed rest or given any salicylates. In February her attending physician informed her she had rheumatic fever and that her heart had been leaking since October 1944. Immediate tonsillectomy was recommended and was performed on February 14, 1945. This seemed to aggravate her present condition. Anorexia, malaise, weakness, fatigue and the joint symptoms became severe. On March 15, 1945 the patient came to Phoenix and was first seen at that time. Her chief complaint consisted of malaise, weakness, loss of 15 pounds of weight,

irregular fever and sore, stiff joints without swelling or redness. She was put to bed rest and on sodium salicylates because of rheumatic heart disease and active rheumatic fever. Laboratory examination at this time showed a normal urinalysis, negative Kahn and negative blood for Brucella abortus. The blood count was hemoglobin 81%, red blood cells 4½ million, white blood count 12,100 and neutrophils were 80%. Cutler sedimentation rate was 23 mm. in one hour. After three weeks of bed rest the joint pain had entirely disappeared and the patient felt better in this respect, but felt weaker. There was a reappearance of fever and chills; the temperature being subnormal in the morning and spiking in the afternoon (see chart). Two days before hospital admission the temperature spiked to 106 degrees and the patient became delirious. This subsided after cold water enemas and alcoholic sponges. The following day the laboratory examination revealed the following: red blood count 2½ million; hemoglobin 49%, white blood count 6,000; neutrophils 75. The Cutler sedimentation rate was 18 mm. in one hour; the urine negative except for 6 pus cells per high power field; the blood culture revealed Streptococcus viridans at this time and again two days later. The heart sounds had become more bounding and a harsh systolic could be heard at the apex and the base.

The patient was hospitalized on April 22, 1945 and the physical examination at the time revealed a well developed, but poorly nourished, pale, white female approximately 21 years of age. Ears, nose, throat and eyes showed no abnormalities except for extreme pallor of conjunctiva and mucous membranes. The mouth and teeth appeared normal; the tonsils had been removed and the fauces were well healed. The chest, lungs, and breath sounds were normal throughout both lung fields. The respirations were 24 per minute. Examination of the heart revealed on inspection, diffuse apex impulse in left fifth intercostal space at left mid-clavicular line; palpation, no thrill felt; percussion, no cardiac enlargement present; ausculation revealed regular rate of 108 per minute. There was a harsh systolic murmur at the apex and aortic area. The peripheral vascular system gave a blood pressure of 100/60; the pulse 108, regular and strong. There was no evidence of peripheral embolic lesions. The abdomen revealed slight epigastric tenderness and the lower abdominal gaseous distension. The kidneys, liver, and spleen were not palpated. The genito-urinary system was normal. The extremities were thin and emaciated, the reflexes were normal. As for the glands, there was no lymphadenopathy. The skin exhibited extreme pallor.

Laboratory findings on admission were; urinalysis, normal; Kahn, negative; blood count: 3,100,000 red count; 44% hemoglobin; white blood count 8,100; neutrophils, 84. The blood culture was positive for Streptococcus viridans on April 23, 1945. The patient was given a transfusion of 500 cc whole blood on April 23rd. Penicillin by continuous intravenous drip was begun on April 24th at a dosage of 400,000 units daily (later increased to 800,000 units - see chart) dropping at a rate of approximately 30 drops per minute. The temperature fell to 99 degrees on the 28th and was normal on May 1st. On April 29th the patient developed red, swollen, tender areas behind the right medial malleous and in the ball of the right great toe and also on the tip of the left third finger. Heparin was begun on April 30th and was administered for 5 days after the intravenous method of Loewe[1], but was discontinued because the cost was so high and because reports in medical literature revealed that good results could be obtained without heparin as well as with it[2 3 4 5]. After May 2nd the patient steadily improved in general feeling and in appetite. The temperature remained normal and the embolic areas gradually cleared. Total penicillin dosage was 18,900,000 units. The penicillin was discontinued on May 24, 1945. The patient was discharged from the hospital on May 25th. The ear, nose, throat and dental consultation did not reveal any foci of infection. By May 31st the sedimentation rate was 12 mm. in one hour; the hemoglobin was 78%; the white count was 11,000 and the blood culture was negative. Since treatment was begun the blood cultures had remained negative, the sedimentation rate normal and the blood count became and remained normal. At the time of writing, 8 months later, the patient feels perfectly normal and there is no evidence of returning symptoms. She has gained about 25 lbs. in weight.

ETIOLOGY

The organism responsible for subacute bacterial endocarditis is one of low virulence. The causative organism in the majority of cases is Streptococcus viridans[6 7 8]. Other causative organisms encountered less frequently are Streptococcus mitis, Streptococcus salivarius, Streptococcus faecalis and Streptococcus liquefaciens. Subacute as well as acute bacterial endocarditis may be caused by Staphylococcus aureus, Streptococcus hemolyticus, the Neisseria group, the Brucella group and the Bacillus influenzae and mixed infections[8].

PATHOGENISIS

General agreement presupposed a previously damaged heart valve or a congenital cardiac defect as a prerequisite for subacute bacterial endocarditis[7 9 10]. Valve defect may be slight and in order of prevalence includes valvular deformity resulting from rheumatic fever, congenital defects, syphilis, and arterial sclerosis[9 10]. Trauma is rarely a cause. The congenital defects in order of prevalence are interventricular septal defect, patent ductus arteriosus, bicuspid valves, tetralogy of Fallot and pulmonary stenosis[10]. Transient bacteriemia is necessary[9]. This may result from otitis media, tonsillectomy, dental manipulation or sinusitis.

SYMPTOMS AND DIAGNOSIS

The onset is usually gradual with increasing malaise, anorexia, fatigue, loss of weight, pallor and a low grade fever which soon reaches a septic type[11]. However, the disease may have a sudden onset of chills and fever, cerebral accident or retinal embolism[7]. Chills and fever are practically consistent findings. As the disease progresses peripheral emboli usually make their appearance. Cardiac defects are found in most every case and congestive failure may become evident late in the disease. Central nervous system symptoms such as encephalitis, meningitis, psychoses and cerebral accidents may be evident[10]. Respiratory symptoms of cough, dyspnea and occasional hemoptysis are frequent. Splenomegaly and glomerulonephritis as well as other embolic phenomena often occur[7 10]. A positive blood culture can be demonstrated sometime during the disease in practically every case. Hypochromic anemia is the rule[11]. Leukocytes vary from leukpenia to leukocytosis or normal counts[11]. Marked leukocytosis is rare except in complications. The sedimentation rate is constantly elevated.

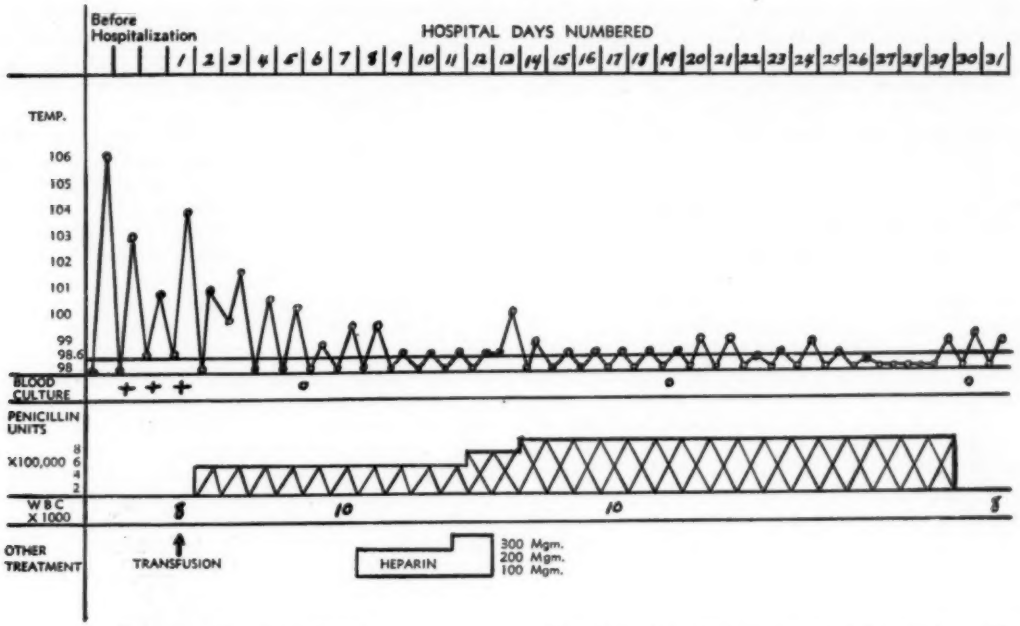
TREATMENT

Until the discovery of penicillin the treatment of subacute bacterial endocarditis was most discouraging. Only occasional cases were reported as cured with the combination of sulfonamides and heparin[2 13 14 15 12]. Now and then a case was reported as cured without any specific therapy. Therapy with gentian violet, vaccines, serums, mercurochrome, acriflavin and merthiolate have been discontinued because they have fallen into disrepute[12].

PENICILLIN

Numerous reports in the literature give varying results from no cure to complete cures in some series of so treated patients[1 2 3 15 16]. Loewe and his associates and Dawson and Hunter give high percentages of apparant cures[1 5]. There are three methods of administering penicillin. The first and probably the most successful as well as being the most comfortable for the patient is continuous intravenous drip[1 19]. However, in this method, occasional thrombophlebitis occurs because the needle is left in place for several hours. This occurred only once in the case reported and was of a minor nature. The second choice of administration is probably periodic muscular injections every three hours day and night. Here frequent painful injections are encountered especially in cases of emaciation. The last and third method is continuous intramuscular drip[17]. This technique is reported as being very comfortable and desirable. The dosage of penicillin per day ranges from 200,000 to 600,000 units and should be daily for approximately four weeks to insure best results[1 5 15 16]; total dosage ranging from 830,000 to 36,700,000 as reported by Dawson and Hunter[5]. A check of the causative organisms resistance to penicillin in vitro before treatment is instituted can indicate the response that may be obtained from adequate treatment in vivo. The technique of the various methods of administration have been described by Loewe and Harris[1 17].

Heparin has not proved of any benefit in this disease and its position has been clearly placed by Katz and Elek[4]. It has all but been abandoned because treatment is as effective without heparin as with it[3 16 19]. Probably a higher incidence of embolic occurence is found with the use of heparin as is also the instance of cerebral hemorrhage[5 18].



Supportative Treatment

The value of transfusions when indicated cannot be over estimated[18]; and also the value of a high caloric diet and high vitamin intake. Removal of any evident foci of infections such as teeth or tonsils, etc. is very important[4]. Rest is of basic importance.

Failures of penicillin treatment in subacute bacterial endocarditis may be due to a number of causes[20]. Among these may be; 1, a resistant organism or strain; 2, inadequate dosage of penicillin administered; 3, an overwhelming infection; 4, failure to carry out other necessary treatment such as removal of bad teeth, infected tonsils or failure to treat sinusitis; 5, unavoidable complications such as embolic coronary occlusion and ruptured valves.

SUMMARY

A case of subacute bacterial endocarditis is reported with an apparant cure with large doses of penicillin by the continuous intravenous method.

DISCUSSION—By Robert S. Flinn, M. D.

These are exciting days in the study of heart disease. A few years ago the field of cardiac disorders was considered to be a sterile one, and cardiac diagnosis like that of neurology were largely of an atomic and academic interest. The field was considered to be thoroughly explored and little, if any, progress was anticipated.

Consider for just a moment the extraordinary change that has taken place in the past few years. Not only are men like Dr. Conner all over the United States treating and apparently curing an affliction which heretofore was uniformly fatal but the most fantastic operations are daily being performed all over the country. In Boston Dr. Robert Gross is regularly treating surgically cases of patent ductus arteriosus but in addition to this has done end to end anastomoses of the thoracic aorta for the cure of coarctation. Dr. Sweet regularly operates for the relief of constrictive pericarditis and the high ligation of the inferior vena cava is done almost routinely by Dr. Linton. In Baltimore Dr. Blalock is regularly performing surgical operations in cases of malformation of the heart in which there is pulmonary stenosis or pulmonary atresia. In cases of tetralogy of Fallot the pulmonary artery is joined by side to side anastomosis with the subclavian arteries. And finally Dr. Dexter at the Peter Ben Brigham Hospital can quite simply insert a catherer in the vein of your arm and skillfully catheterize the right side of the heart to determine the oxygen saturation.

Within recent months I have had an opportunity of hearing discussions on the treatment of the disease by three different groups of workers.

The first was Dr. Arthur Bloomfield of San Francisco who has had an extensive experience in the treatment of this disease. Contrary to most authorities, he believes that a patient with this affliction should be treated for a minimum of two months. You will remember

that the average authority believes that from three to four weeks is sufficient.

Dr. Bloomfield's routine was 25,000 units every 3 hours intramuscularly day and night for a period of 2 months. He then began experimenting with other dosages. He found that by giving 50,000 units, that is in an aqueous solution, every 6 hours that the patient did equally as well as with the 3 hour dosage. He then used 200,000 units twice daily and the blood cultures became negative and the patient recovered. However when he began using 500,000 units daily in one injection, the blood cultures became positive and it was necessary to abandon the single dosage. He expressed the belief that when penicillin was mixed with beeswax and other substances, marked changes in the penicillin routine would be in order. Of course, Dr. Bloomfield believes that 3 positive blood cultures should be obtained before starting treatment and at once treatment was started that adequate doses should be given. He found that although theoretically the concentration in the serum should be sufficient to kill the microbes in the test tubes, actually it was not necessary to maintain a concentration in the blood serum at all times. In other words, the concentration of the penicillin in the plasma is apparently not necessary in most cases. It was pointed out in this discussion that the temperature may remain elevated for some time even in the presence of a negative blood culture. Although Dr. Bloomfield was enthusiastic with the results obtained, he pointed out that the end results were not entirely satisfactory in all cases since 25% of his patients eventially went into cardiac failure and many died. Why these individuals who recover from an apparently fatal disease, should develop cardiac is not known. There is evidently some decrease in the cardiac reserve due to the fact that penicillin hastens healing and the damaged valves are further deformed. In 10% to 15% of Bloomfield's cases the organism was resistant to penicillin. This is contrary to the observations of the Boston workers. Keefer and Anderson, who have had a large experience in this condition, have experimented with various methods of administration. They disagree with Bloomfield and say that 2 months is longer than most patients need to be treated. They believe that 2 to 3 weeks is sufficient. After trying the intravenous method, both continuous and intermittent, and the intramuscular injection, both continuous and intermittent, they are now using the intermittent intramuscular injection every 3 hours. In common with all observers at the present time, they do not believe Heparin or any anti-coagulant have any place in the treatment of sub-acute bacterial endocarditis. They consider that sensitivity tests are necessary before treatment as well as four positive blood cultures. They have found that 0.004 units per cc. is the average sensitivity. If the sensitivity is about 1.0 units per cc. the individual should be treated with penicillin-x 300,000 units twice daily in lanilin and peanut oil.

Keefer and Anderson have reported 400 cases of sub-acute bacterial endocarditis of which 54% were arrested for one year or more. They believe that from 60% to 75% of these people will recover. It should be emphasized here that sub-acute bacterial endocarditis is not a rare condition. Many authorities estimate that from 25% to 40% of individuals with rheumatic heart disease will eventually develop sub-acute bacterial endocarditis.

From these reports certain conclusions can be drawn. a. Sub-acute bacterial endocarditis responds satisfactorily to treatment with penicillin without the use of heparin. However the patient is subject to recurrences of his infection as well as subsequent cardiac failure. b. It is important that a positive diagnosis be made before treatment is undertaken. c. Adequate penicillin dosage is definitely indicated. At least 300,000 units should be given daily for a period of from 4 to 8 weeks. d. Intravenous drip is not only not necessary but not desirable. Intramuscular injections every 4, 5 or 6 hours or the use of a wax preparation is probably sufficient. e. As a precaution against reactivation, erradication of foci such as teeth and tonsils should be undertaken. Since sub-acute bacterial endocarditis frequently follows the removal of teeth, about 25% of the cases, according to Bloomfield, prophylactic doses of sulfonamides or penicillin should be given for some time prior to operation.

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ARIZONA MEDICINE
Journal of
ARIZONA STATE MEDICAL ASSOCIATION

Vol. 3 March, 1946 No. 2

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Editorials

The American College of Chest Physicians

The Arizona Chapter of the American College of Chest Physicians is having a one day meeting on Wednesday, May first — one day preceeding the Arizona State Medical Convention which is being held at Phoenix May 2, 3, and 4, 1946. The Westward Ho Hotel, Phoenix, is to be host to both medical meetings. It is necessary to make reservations soon at the Westward Ho Hotel directly.

This chest disease meeting will dovetail very well with the state meeting providing an added opportunity for refresher work with a well arranged state meeting.

The guest speakers on chest diseases will be Dr. John C. Jones of Los Angeles; Dr. Duane Garr of Memphis; and Dr. Alvis E. Greer of Houston. A well balanced program has been arranged which will be of interest to the internist, surgeon, and general practitioner.

Most of the titles of the program are self explanatory. Dr. Carr will present pulmonary disease and bronchiectasis in workers in an arsenal from loading mustard gas shells. His second paper concerns the differential diagnosis of wheezing, bronchoscopic aspiration in status asthmaticus, and dorsal sympathetic ganglionectomy in intractable asthma.

This is an open meeting and physicians are welcome. This excellent program should be of interest to all physicians of Arizona and everyone is urged to attend.

Liver Function Tests

The numerous tests for determining decreased liver function advocated by different investigators have caused considerable uncertainty as to which might be the most useful. Consequently there as developed a feeling that, since none gives consistent results, laboratory tests are more or less useless in diseases of this organ. The multiple physiological activities of the liver preclude the use of a single functional test as the same pathological process in diffion in the same manner nor to an identical degree. In spite of this feeling of inadequacy there are a few tests which when used in combination with each other and interpreted in relation to clinical manifestations give valuable information as to the type and degree of liver damage.

In general, it may be said that those tests involving known liver functions give the greatest information while the results from procedures making use of unknown factors must be interpreted with reservation. Among the former are excretion tests represented by bromsulfalein and rose-bengal elimination, detoxification or synthesis is in the hippuric acid test, carbohydrate metabolism exemplified by the galactose and glucose tolerance and protein matabolism as in Amino acid, Albumin-globulin ratio, and prothrombin determinations. The latter are represented by the Takata-Ara, cephalin

ferent individuals does not affect liver func-

flocculation, Maclagan thymol turbidity and Weltman serum coagulation reactons. The mechanism of these is not known and, though they may be reliable, too much dependence can not be placed upon the results obtained in their performance.

For "mass screening" Watson has advocated the use of four tests, e.g., icterus index, urine urobilinogen, cephalin-chloresteral flocculation and bromsulfalein tests. For more extensive study, a battery of liver function tests are undertaken, perhaps too extensive for private practice. Of the above tests, bromsulfalein excretion or its counterpart, the rose-bengal elimination, should be used when there is no jaundice. In the presence of bile retention, the galactose tolerance, though not so reliable, may be substituted.

The amount of hippuric acid synthesis from sodium benzoate is very reliable in estimating the presence and degree of liver damage, especially if given intravenously. There has been reported a reaction following ingestion of sodium benzoate in a patient with severe jaundice. The symptoms were chest pain, extreme dyspnea, orthopnea and leukopenia. This is probably of rare occurrence and should not decrease the use of this test unless further reports of toxicity are forthcoming.

A valuable procedure infrequently used in liver disease is that of Cholesterol partitioning. Weinhouse expresses surprise that it is not more generally adopted as he feels that the test is valuable for prognosis as well as differential diagnosis. The ratio of free to total cholesterol is not altered in obstructive jaundice even though the total is markedly increased. In parenchymal damage Cholesterol esters are decreased apparently in proportion to the degree of liver injury.

The more recently devised cephalin-cholesterol flocculation test appears to be valuable in following the course of liver disease and may be useful in determining early damage. As yet, it is too early to properly evaluate the results of its use. There is no doubt that minimal changes give positive flocculation. However, technical false positives as well as positives occurring in other diseases may lessen the value of the test for diagnostic purposes.

The quantitative van den Bergh or icteric index is certainly useful in determining and following the retention of bilirubin. As both give approximately the same information, it is not necessary to combine them except as a check on the technique. There seems to be no reason for continuing the use of the Takata-Ara or Weltman serum coagulation tests.

From all indications, it seems necessary at present to use a combination of properly selected laboratory tests to determine the type and degree of altered liver function. It is suggested that at least two of the following tests be used as an aid in diagnosis that is, bromsulfalein excretion in the absence of jaundice or galactose tolerance if jaundice is present, hippuric acid synthesis, cholesterol partitioning and perhaps the cephalin-cholesterol flocculation test. For following the course of liver disease at least one of these tests should be used: icterus index, quantitative van den Bergh or Hanger's flocculation reaction. Other tests such as the A/G ratio, prothrombin time, glucose tolerance and serum posphotase may be added to the diagnostic armamentarium. It is, of course, always necessary to determine the icterus index or quantitative bilirubin in subclinical or borderline icterus. O. W.

An Announcement To The Physicians OF Arizona

Between March 1st and June 1st, 1946, a nation-wide study of the health services for the youth of the country is being made by practicing doctors under the sponsorship of the American Academy of Pediatrics.

This study is to be carried out on a state level by the physicians of each state.

The purpose of the study is three-fold.

1. To determine the distribution among practicing physicians of the load of the medical care of the youth of the nation.

2. To evaluate the status of existing and nonexisting health facilities as found by practicing physicians in the medical care of their young patients.

3. To integrate this data on a state by state level for the future practical use of the physicians in each state.

Thus a measure of available health facilities in each state will become known to the medical profession in their own state. The information will serve as an index on which the differen-

tial health needs for the betterment of health facilities in each community can be determined. The data will serve as foundation stones on which appropriate state medical, health and lay organizations may build for future improvement in the youth health facilities for Arizona.

Hence as a practicing physician in the state you will be asked shortly to do your part in this study by giving conscientiously your share of pertinent information. You will be asked two fundamental questions on the basis of your personal medical experience and of your knowledge of the status of youth health facilities in the community in which you practice.

1. To what degree do you, as a physician, carry the load of the medical care of young patients in your community?

2. Have the health facilities in your community met your medical requirements in carrying out the medical care you wish to give your young patients?

Two questionnaires bearing on these two questions will reach you within a short time. Will you please be thinking about these questions in order that you may give the information which you consider most vital in this particular study. The success of this study in each state depends wholly upon the cooperation of *every* practicing physician in the state.

VIVIAN TAPPAN, M. D.
State Chairman for Arizona
American Academy of Pediatrics

SYDNEY GELLIS, M. D.
Executive Secretary for Youth
Health Study in Arizona

A Breakdown Of The 4F's

Much has been said about the five million 4F's who were unfit for Military Service as reported in statistics from the selective service examinations. The following excerpt is from a paper entitled "The Philosophical Background of Compulsory Health Insurance" by Lowell S. Goin, M. D. Los Angeles:

Selective Service Statistics

Since the five million 4F's are so frequently invoked, and since it is at first glance so shocking a figure, let us examine it in some detail. One difficulty with the argument is that intellectually it is not very honest. In Senator Pepper's interim report the figure is announced on page one not as five million, but as four-and-one-half million but on page three of the same report the graph discloses the true figure to be 4,217,000. An error of 13½ per cent can scarcely be considered insignificant. Of the total number rejected 444,800 were rejected as manifestly disqualified, that is to say the totally blind, the totally deaf, the deaf-mutes, the legless, the armless and so forth. It seems perfectly obvious that no program of medical care could have influenced this figure. 701,700 were rejected for mental disease. Again I don't know of a program of medical care which would have prevented mental disease in these unfortunate people. 582,100 were rejected for mental deficiency, that is to say that they were the imbeciles, the idiots and the morons. The most casual knowledge of eugenics would persuade anyone that this group does not constitute a medical problem, and these three groups together reach the large total of 1,727,600. When these have been excluded there remain 2,426,500 or somewhat less than half of the originally claimed five million. Of this group 320,000 were rejected for muscular-skeletal defects, that is to say the clubfoot, the paralytic, the withered arm, the congenitally dislocated hip and so forth. Again I wonder what program of medical care might have made this group fit for military service. 280,000 were rejected for syphilis. The statute books are already loaded with laws regarding syphilis. There is probably not a community in the United States in which a person afflicted with this disease cannot secure treatment from the Department of Public Health. How, then, would compulsory health insurance have eliminated this group? 220,000 were rejected for hernia. Hernia is a congenital defect and if a person is born with a defective inguinal or femoral canal he is likely to have a hernia and medical care has nothing whatever to do with the occurrence of hernia. 160,000 were rejected for "eyes." Since eyes would seem to be useful adjuncts to men who were to be soldiers or sailors, I presume that this means defective vision. If one is born with an eyeball too long or two short or one which is not a globe one will either wear glasses or not see very well and medical care has nothing whetever to do with it. Thus about one million more have been eliminated and the number of rejections on a basis of lack of medical care is about 1,500,000. Whether any program of medical care would have materially reduced this number is problematical. If the proponents wish to rest their case upon the need shown here (and they have made a great deal of it), I am content.

Office Of The Surgeon General

GENERAL LULL LEAVES SGO FOR AMA

Major General George F. Lull, Deputy Surgeon General of the Army, whose notable record in that capacity won him the Distinguished Service Medal, the highest noncombatant award, has retired from the Army after 33 years of service with the Medical Corps.

General and Mrs. Lull will move to Chicago, where General Lull will become Secretary and General Manager of the American Medical Association. He will take up his new duties officially in July, when the retirement of Dr. Olin West, the present Secretary and General Manager, becomes effective, but he will immediately join the staff of the American Medical Association to familiarize himself with the work of the organization.

The citation for the Distinguished Service Medal stated that, in his capacity as Chief of the Personnel Service, General Lull was largely responsible for the development of policies and studies which resulted in outstanding achievements in the Army's medical program.

Early in World War I he commanded a base hospital at Camp Beauregard, Louisiana, and later organized and commanded Base Hospital No. 35 of the A.E.F. From 1922 until 1926 General Lull was Director of the Department of Preventative Medicine at the Army Medical Center. In 1929 he was appointed Medical Adviser to the Governor General of the Philippine Islands, where he served for three years. He had charge of the Vital Records Division of The Surgeon General's Office from 1932 to 1936.

The following four years he was Director of the Department of Sanitation at the Medical Field Service School, Carlisle Barracks, Pennsylvania. In 1940 he returned to The Surgeon General's Office as Chief of Personnel Service until May 31, 1943, when he was appointed Deputy Surgeon General.

Born in Pennsylvania March 10, 1887, General Lull received his M. D. degree from Jefferson Medical College in 1909, a Certificate of Public Health from Harvard Technology School of Public Health in 1921, and his degree of Doctor of Public Health from the University of Pennsylvania in 1922. He is an honor graduate of the 1913 class of the Army Medical Scool.

MALARIA RELAPSE RATE DECLINING

The hospital admission peak for malaria relapses in the United States was reached in February 1945, with a total of approximately 6000 cases, and has been steadily declining since that time, according to a recent announcement by the Army Medical Department.

During 1943, when men began to return from tropical theaters of operations in increasing numbers, the total number of hospital admissions for malaria relapse reached 5,275. By 1944 it had jumped to almost five times that number — 28,150, and in the first six months of this year the total was 30,420.

It is believed, however, that the return of troops from malaria-ridden areas will not appreciably affect the downward trend of admissions, for a large proportion of original personnel already has been replaced and returned. Units and replacements sent to these Pacific-Asiatic regions after the middle of 1943 are not expected to show as high rates of infection as those of earlier groups.

SN-7618 EFFECTIVE ANTI-MALARIAL DRUG

The new anti-malarial drug, SN-7618, which the Army Medical Department played an important part in developing, has been found to be superior in many ways to quinine or atabrine, according to a recent announcement by the Office of The Surgeon General.

Studied in collaboration with the Interservice Board for the Coordination of Malarial Studies, SN-7618 was tested in experiments at Harmon General Hospital, Longview, Texas, and Moore General Hospital at Swannanoa, North Carolina, in addition to some overseas theaters of operations.

Designed to obtain information on the value of the drug in controlling the symptoms and fever occurring in acute attacks of malaria, these studies included the observation of more than 600 malaria-stricken soldiers, who were administered different amounts of the drug in from one to seven days. When notations had been made of symptoms such as the passing of the fever and the disappearance of malarial parasites from the blood stream, the patients were kept in the reconditioning section to determine the possibilities and time interval for relapse.

Comparisons were made of the results with

those obtained in similar studies of atabrine, quinine and other new drugs. It was found that one day's treatment with SN-7618 promptly controlled fever and other symptoms and that the parasites rapidly disappeared from the blood.

Observation periods of four months showed that 75 per cent of the men tested suffered relapses. Though this number is similar to that found in experiments with quinine and atabrine, the interval between attacks was found to be longer when SN-7618 was used. Patients soon acquired a preference for the drug because of its rapid action, which permitted them to leave the wards within two or three days.

Though SN-7618 is considered superior to other anti-malarial drugs in that it does not discolor the skin, upset the stomach, or cause a buzzing in the ears, it is not a one-treatment cure for vivax malaria. Weekly doses of the drug can be taken to avoid relapse after an acute attack, but upon discontinuation of the treatment further relapses may occur.

SN-7618 was so named because it was the 7618th drug tested in the four-year program sponsored by the Committee on Medical Research. The program was financed by the Office of Scientific Research and Development.

REGARDING THE UNUSUAL EFFECT OF PENICILLIN THERAPY UPON THE UTERUS

Mortimer D. Speiser and Evan W. Thomas. The Journal of Venereal Disease Information, Washington, 27:9-20 (January) 1946.

Upon reviewing the records of 156 prenatal patients and investigating 1,400 nonpregnant women treated with penicillin, the authors found no evidence that penicillin therapy produced contractions of the uterus or uterine bleeding.

Among the 156 prenatal patients were 5 patients who showed some aberration from the usual course at a variable period of time after treatment; in only one patient was there any question regarding the possible effects of penicillin treatment upon the pregnant uterus and here it was highly doubtful.

On the premise that no known single drug without an endocrine effect is capable of producing uterine contractions as well as causing intermenstrual bleeding, the authors investigated the episodes of uterine bleeding occurring in nonpregnant women while under penicillin therapy. Penicillin therapy was given to over 1,300 women without any menstrual abnormality being noted which could be attributed to the effects of such therapy. Also, 100 patients under penicillin treatment for early syphilis were accurately studied, and in only one instance was any alteration from the usual cycle found. In this patient bleeding recurred 6 days after a previous normal period.

The authors conclude that in the few reported cases of both abortions and intermenstrual bleeding in association with penicillin therapy, some associated pathologic process may have accounted for such episodes, namely an associated cervical erosion, endometritis, salpingitis, ovarian cysts, or uterine neoplasms.

—Journal of Venereal Diseases Information, U.S.P.H.S.

SAN FRANCISCO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

THE AMERICAN MEDICAL ASSOCIATION is convening at San Francisco on July 1-5 for its Annual Session. Are you planning to attend? If so let us recommend that you make your hotel reservation immediately.

Our Central Office applied for a block of rooms at designated hotels where Arizona physicians might be assured of reservations. We have been informed that this cannot be done as each physician personally will need to apply for his reservation on prescribed application forms. Here is what you should do:

WRITE AT ONCE TO:

DR. M. LAURENCE MONTGOMERY,
Chairman
Sub-Committee on Hotels
American Medical Association Convention
Rm 200 Civic Auditorium
San Francisco 2, California

AND REQUEST AN APPLICATION FORM FOR HOTEL RESERVATION. We are informed that only in this manner will you be able to reserve rooms for the Convention. Should you apply direct to the hotel of your choice, your request will merely be referred to the above committee and your application for a room will be further delayed.

Frank J. Milloy, M. D.
Secretary

ORGANIZATION SECTION

CHARLES P. AUSTIN, M. D., President

Directory

ARIZONA STATE MEDICAL ASSOCIATION

Organized 1892

423 HEARD BUILDING, PHOENIX, ARIZONA

OFFICERS AND COUNCIL

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President

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Vice-President

Frank J. Milloy, M. D. (1946) ..... Phoenix
Secretary

C. E. Yount, M. D. (1946) ..... Prescott
Treasurer

F. W. Butler, M. D. (1946) ..... Safford
Speaker of the House

Jesse D. Hamer, M. D. (1946) ..... Phoenix
Delegate to A. M. A.

D. P. Harbridge, M. D. (1945) ..... Phoenix
Chairman, Medical Defense

District Councilors

Robert S. Flinn, M. D. (1947) ..... Phoenix
Central District

A. C. Carlson, M. D. (1946) ..... Jerome
Northern District

Hal W. Rice, M. D. (1948) ..... Bisbee
Southern District

Councilors-at-Large

Dan L. Mahoney, M. D. (1948) ..... Tucson
O. E. Utzinger, M. D. (1947) ..... Ray
E. Payne Palmer, M. D. (1946) ..... Phoenix

COMMITTEES*

Scientific

Cancer Control—A. L. Lindberg (1947), Tucson; E. Payne Palmer (1945), Phoenix; M. G. Wright (1945), Winslow, and J. N. Stratton (1946), Safford.

History and Obituaries—Hal W. Rice, Historian, Bisbee; Donald F. Hill, Tucson, Frank J. Milloy, Phoenix.

Industrial Health—John D. Hamer (1947), Tiger; Chas. B. Huestis (1946), Hayden; E. M. Hayden (1945), Tucson.

Maternal and Child Health—L. C. McVay (1947), Phoenix; Howard C. James (1945), Tucson; W. P. Sherrill (1946), Phoenix.

Orthopedics—Geo. L. Dixon (1947), Tucson; E. W. Adamson (1946), Douglas; James Lytton-Smith (1945), Phoenix.

Scientific Assembly—George O. Bassett, President-elect and Chairman (1950), Prescott; Carl H. Gans (1947), Bisbee; G. F. Manning (1946), Flagstaff; R. W. Rudolph, Host Society (1945), Tucson; Frank J. Milloy (1945), Phoenix.

Scientific Education and Postgraduate Activities—A. H. Dysterheft (1946), McNary; A. I. Podolsky (1947), Yuma; Florence B. Yount (1945), Prescott; Chas. S. Kibler (1945) Tucson.

Syphilis and Social Diseases—L. H. Howard (1947), Tucson; L. G. Jekel (1946), Phoenix; George O. Bassett, (1945), Prescott.

Tuberculosis Control—James H. Allen (1947), Prescott; Samuel H. Watson (1946), Tucson; E. W. Phillips (1945), Phoenix.

Non-Scientific

Auxiliary Advisory—Geo. R. Barfoot (1947), Phoenix; W. Claude Davis (1946), Tucson; Florence B. Yount (1945), Prescott.

Editing and Publishing—Jesse D. Hamer (1945), Chairman, Phoenix; A. L. Lindberg (1946), Tucson; Walter Brazie (1947), Kingman.

Industrial Relations—Meade Clyne, Tucson; James Lytton-Smith, Phoenix; A. C. Carlson, Jerome; O. E. Utzinger, Ray; John W. Pennington, Phoenix; C. E. Yount, Prescott; Frank J. Milloy, Secretary to Committee.

Medical Defense—D. P. Harbridge, Chairman (1945), Phoenix; A. C. Carlson (1946), Jerome; John W. Pennington (1947), Phoenix.

Medical Economics—C. E. Patterson (1946), Tucson; Meade Clyne (1945), Tucson; Robert S. Flinn (1947), Phoenix.

Public Health Education—H. L. McMartin (1947), Phoenix; J. S. Gonzalez (1946), Nogales; Paul H. Case (1945), Phoenix; Geo. O. Bassett (1945), Prescott.

Public Policy and Legislation—Charles A. Thomas (1947), Tucson; Walter Brazie (1946), Kingman; Jesse D. Hamer (1945), Phoenix.

State Health Relations—Louis G. Jekel, (1947) Phoenix; E. Henry Running (1946), Phoenix; Donald F. Hill (1945), Tucson.

* Terms expiring in 1945 will hold until 1946.

President's Message

THE ANNUAL MEETING

The purpose of my message this month is to urge upon the membership a full attendance at the ANNUAL MEETING being held on May 1, 2 and 3 at Phoenix, Hotel Westward Ho Headquarters.

Scientific Sessions

This is the first time in two years that we have had a scientific session as the Office of Defense Transportation cancelled the meeting for 1945. A Guest Staff of five speakers from the Faculty of Baylor University will present the entire scientific program and have outlined a splendid program that should appeal to general practitioner and specialist alike. The invitation had been extended to Baylor to present the program for 1945, hence the Council voted to re-extend the invitation to them for 1945 in view of the 1945 cancellation.

Business Sessions

This will be an epoch making year in the history of the Association, for at this Annual Meeting, A Medical Service Plan for Arizona will be voted on in its final major provisions. The House will, no doubt, convene as the Corporation set up in this Service and set the wheels into motion for a sound medical service plan for the people of this state. The Committee on Medical Economics has made a sound study of services now in operation and has presented to the membership from time to time, steps in formulating a plan for Arizona. We should now be ready to act and present a service second to none in the United States.

Care of the Veterans of World War II will also be an item for major consideration of the Council and House as it is the plan for the

various medical associations to adopt courses of action for care of veterans within their respective areas.

American Medical Association San Francisco Session

July 1-5 will find the American Medical Association in annual session at San Francisco. This is the first time in several years that this great meeting has been within such convenient reach of Arizona physicians. I would urge upon the membership that you take time out to attend this important session as the scientific programs and the scientific exhibits, to say nothing of special meetings, technical displays, and the like are an education in themselves and will be a scientific treat to the busy physicians of Arizona who have been kept so closely at home to the grind of 'killing' practice during the war years. Physicians returned from the armed services will also enjoy the refreshment and relaxation of attendance at the San Francisco sessions.

Shall we see each other at Phoenix on May 1, 2 and 3 when our own Association convenes in Annual Session, and again at San Francisco on July 1-5 when the American Medical Association resumes its annual sessions after a wartime recess!

President

DELEGATE'S REPORT

The Meeting of the House of Delegates American Medical Association

The House of Delegates of the American Medical Association met December 3, 4, and 5th, in the Palmer House, Chicago, Ill. This meeting normally would have been held last June, but war restrictions on conventions prevented.

The House of Delegates is limited to 175 members, according to the constitution and By-Laws of the A.M.A. 170 were in attendance, representing practically all the state and territorial constituent bodies, all of the scientific sections, and one each from the Army, Navy, and U. S. Public Health Service. In addition, many members of the various A.M.A. Councils, its officers and Board of Trustees, and other official bodies of the Association were in attendance.

Many problems of paramount importance were considered by the House of Delegates during this recent session. The House was again called to act upon various resolutions introduced for the purpose of clarifying the internal operations of the American Medical Association. In particular, it acted to clarify further the authority and functions of the Board of Trustees, the association officers and bureaus in the headquarters office, and to define further the manifold and expanding functions of the new Council on Medical Service and Public Relations. This new Council was created by the House of Delegates during its session in 1943.

The recent address of President Harry S. Truman on the politically sponsored National Health policies, and the newly created Wagner-Murray Dingell bill, were referred to the House for its consideration. These measures were referred to the Reference committee on Legislation and Public Relations, and by the adoptions of this reference committee's report, the A.M.A. defined its policy on these compulsory health insurance proposals. More in detail regarding these proposals will be given later in this report.

There were resolutions introduced into the House relative to economic, social, and scientific questions. After consideration of these on the part of the various reference committees, definite decisions were reached. One action accepted called for the creation of a new Scientific Section of the A.M.A., that which will be known in the future as the Section on General Practice, so that from now on all the G.P.'s can get together at the Scientific Sessions and sponsor their own program. Another significant action taken called for the adoption of a new by-law which will enable the House of Delegates to meet twice yearly. In that manner, a more prompt expression of the policies of American Medicine can be determined, especially on major problems which will affect the medical profession during the next few years.

Then there were problems considered by the House relating to the physicians still in medical military service, and those who are now, or have been, discharged. The House created a new Committee on Militray Service whose functions have been defined. This committee will give careful consideration to all communica-

(Continued on page 112)

Fifty-fifth Annual Meeting

ARIZONA STATE MEDICAL ASSOCIATION

PHOENIX, ARIZONA

May 2-3

1946

Headquarters:
HOTEL WESTWARD HO

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MEETING PLACES - HOTEL WESTWARD HO

Association

Registration	Lobby
Council Sessions	Mezzanine
House of Delegates	Mazzanine
Scientific Sessions	Lounge (off lobby)
Scientific Luncheon	To be announced
Dinner-Dance	Fiesta Room
Technical Exhibits	Lobby, Palm Room, Mezzanine

Auxiliary

Registration	Mezzanine
Sessions	Mezzanine
Luncheon—Board Members	Country Club
Luncheon	Paradise Inn
Dinner (Auxiliary)	Westward Ho
Dinner-Dance	Fiesta Room

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SCHEDULE OF BUSINESS AND ENTERTAINMENT

Association

Registration	May 1. 2, 3
Council Sessions	8:30 A. M. May 2
	8:00 A. M. May 4
House of Delegates	7:00 P. M. May 3
	8:00 A. M. May 4
Dinner-Dance	7:30 P. M. May 2
Scientific Luncheon	12:30 Noon, May 3
Golf	May 4

Auxiliary

Registration	10:00 A. M. May 2
Sessions	3:00 P. M. May 2 and 10:00 A. M. May 3
Luncheon—Board	12:00 Noon, May 2
Luncheon	1:00 P. M. May 3
Dinner-Dance	7:30 P. M. May 2
Dinner (Auxiliary only)	7:00 P. M. May 3

Program

Thursday Afternon, May 2

GENERAL SESSION

1:30 P. M.

Call to Order
Charles P. Austin, President

Invocation
Reverend William Roland Otto,
Trinity Cathedral, Phoenix.

Welcome
James R. Moore, M. D., Phoenix.

Response
William Paul Holbrook, M. D.. Tucson.

Induction of President
Charles P. Austin, M. D., officiating.

Presidential Address
George O. Bassett, M. D., Prescott

Memorial Service
Hal W. Rice, M. D., Historian

2:30 P. M. SCIENTIFIC

1. "Physical Findings in Diseases of the Lung"
   James A. Greene, M. D.
2. "Cranio-cerebral Trauma"
   James Greenwood, Jr., M. D.
3. "Management of Pyogenic Meningitis"
   George W. Salmon, M. D.
4. Clinical Pathological Conference
   Guest Staff

Friday Morning, May 3—9:30 A. M.

1. "Causes of Sudden Death in Obstetric Patient"
   Herman Johnson, M. D.
2. "Protruded Intervertebral Disc"
   James Greenwood, Jr., M. D.
3. "Headache," Round Table Discussion or Panel Discussion
   Guest Staff

Discussion—Guest Staff

SCIENTIFIC LUNCHEON—12:30 Noon
Question and Answer Period.

Friday Afternoon, May 3—2:00 P. M.

1. "Diagnosis and Treatment of Different Types of Diabetes Mellitus"
   James A. Greene. M. D.
2. "Evaluation of Changes in Gangrene of the Extremities"
   Paul A. Wheeler, M. D.
3. Clinical Pathological Conference
   Guest Staff

SCIENTIFIC SESSIONS

The program for the Scientific Sessions will be presented by the following group of instructors from Baylor University, College of Medicine, Houston, Texas.

Dr. James A. Greene—Professor of Medicine and Chairman of the Department, and Dean of the Clinical Faculty.

Dr. Paul A. Wheeler—Associate Professor of Pathology.

Dr. George W. Salmon — Assistant Professor of Pediatrics.

Dr. Herman W. Johnson—Professor of Obstetrics and Chairman of the Department.

Dr. James Greenwood, Jr.—Associate Professor of Clinical Surgery.

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WOMAN'S AUXILIARY
to the
Arizona State Medical Association

ANNUAL MEETING

President—Mrs. Paul Henry Case.....Phoenix
President-Elect—Mrs. Hervey Faris.....Tucson
First Vice-President—Mrs. Royal Rudolph..Tucson
Second Vice-President—Mrs. Joy A. Omer..Tucson
Recording Sec'y—Mrs. James R. Moore....Phoenix
Corresponding Sec'y—Mrs. Louis G. Jekel....Phoenix
Treasurer—Mrs. E. Henry Running.....Phoenix
Directors—Mrs. Harlan P. Mills, Phoenix Mrs. Edward M. Hayden, Tucson; Mrs. James H. Allen, Prescott.

CONVENTION COMMITTEES
Maricopa County Auxiliary, Hostess

General Chairman—Mrs. William F. Schoffman

Registration and Credentials
Mrs. Joseph Lentz, Chairman
Mrs. Virgil A. Toland
Mrs. S. R. Caniglia
Mrs. Thomas H. Bate

Courtesy
Mrs. Dudley Fournier, Chairman
Mrs. E. Payne Palmer
Mrs. Howell Randolph
Mrs. Kent H. Thayer

Transportation
Mrs. John W. Pennington, Chairman
Mrs. Carlos C. Craig
Mrs. Hilton J. McKeown
Mrs. Lloyd K. Swasey

Telephone
Mrs. Wesley G. Forster, Chairman
Mrs. Frederic D. Baier
Mrs. L. D. Beck
Mrs. Frank W. Edel

Luncheon Hostesses
Mrs. Onie O. Williams, Chairman
Mrs. Mayo Robb
Mrs. Norman A. Ross
Mrs. Clarence B. Warrenburg
Mrs. George A. Williamson

Dinner Hostesses
Mrs. Charles W. Sult, Chairman
Mrs. Angus J. DePinto
Mrs. Leslie B. Smith
Mrs. Marriner W. Merrill
Mrs. Donald G. Carlson

Auxiliary Program

THURSDAY, MAY SECOND
10:00 A. M. to 2:00 P. M.

Registration.....Mezzanine, Hotel Westward Ho

12:00 Noon

Luncheon for Board Members.....
Phoenix Country Club

2:00 P. M.

Board Meeting....Parlor A or B, Hotel Westward Ho

3:00 P. M.

Mrs. Paul Henry Case, President, Presiding

General Session....Parlor A or B, Hotel Westward Ho
Invocation .....Rev. Richard N. Merrill
Address of Welcome....Mrs. William F. Schoffman
Phoenix
Response.....Mrs. J. H. Woodard, Tucson
Speaker—Miss Martha Rogers
Subject: "Visiting Nursing Service"
Business Sessions:
Roll Call
Reading of Minutes
Report of Meeting of Board of Directors
Reports of State Officers and Committe Chairmen
President.....Mrs. Paul Henry Case, Phoenix
First Vice-President.....Mrs. Royal Rudolph
Tucson
Corresponding Sec'y.....Mrs. Louis G. Jekel
Phoenix
Treasurer.....Mrs. E. Henry Running, Phoenix
Cancer Project.....Mrs. Benjamin Herzberg
Phoenix
Legislative.....Mrs. C. E. Patterson, Tucson
National Board....Mrs. Jesse D. Hamer, Phoenix
Public Relations....Mrs. George L. Dixon, Tucson
Publicity....Mrs. Thos. A. Hartgraves, Phoenix
Bulletin.....Mrs. L. Clark McVay, Phoenix
Hygeia.....Mrs. Ludwig Lindberg, Tucson
Historian.....Mrs. George B. Irvine, Tempe
War Service.....Mrs. Dudley Fournier, Phoenix
Reports of County Auxiliary Presidents—
Maricopa..Mrs. William F. Schoffman, Phoenix
Pima.....Mrs. C. S. Linton, Tucson
Yavapai.....Mrs. Henry A. Hough, Prescott
Report of Registration and Credentials Committee
Report of Nominating Committee—
Mrs. C. E. Patterson, Chairman.....Tucson
Mrs. James H. Allen.....Prescott
Mrs. E. Henry Running.....Phoenix
Election of Officers
Report of Entertainment Committee
Report of Transportation Committee

FRIDAY MORNING, MAY THIRD
10:00 A. M.—General Session

Greetings.....Mrs. Charles W. Sult, Phoenix
Business Session:
Roll Call
Reading of Minutes
Memorial Service
Miscellaneous Business
Installation of Officers
Speaker.....Mrs. Kitty Ives Coleman
Subject: "Arizona Medical Service Plan"

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ENTERTAINMENT
Friday, May 3

Luncheon.....1:00 P. M. Paradise Inn

Friday, May 3

Dinner.....7:00 P. M. Hotel Westward Ho

tions received from medical men in service, in order that prevailing difficulties during the war just closed will be studied and overcome, as nearly as possible, during any future emergency. The House requested also that the Board of Trustees develop a Bureau of Information on a permanent basis, so that the returning medical man can be assisted in securing internships or residencies, or post-graduate education, and to assist these returning men in finding suitable locations, assist in licensures and similar matters of personal, intimate concern.

The House of Delegates was honored by the presence of Major General Paul R. Hawley, acting surgeon general of the Veterans' Administration. General Hawley addressed the House, and presented a frank and sincere discussion on the problems confronting the Veterans' Bureau in the future handling of the returning veteran with service connected disabilities. In his address, he reviewed the several reasons why the veterans' medical care in the past has not been very successful. He mentioned the fact that the veterans' administration was organized hurriedly to care for the men from the last war, and that doctors were secured without too much attention to their qualifications, that, ofter the corps was organized, the medical service was submerged under lay administrators, both in Washington, and in the field. These administrators knew nothing about medical service, and were not very interested in medical problems. Also, in the procurement of new doctors, the Civil Service dictated the selection, so that it was difficult to remove the unqualified men. The general called attention to the fact that physicians in the veterans' service were not admitted into the fellowship of the A.M.A., and he asked that consideration be given to this matter, after the medical service of the administration be carefully reorganized.

The general called attention to the fact that four million veterans from the last war were not taken care of satisfactorily with a full time corps, so how are we to approach the problem of attempting to care of 20,000,000 from this war. He stressed the need of full time doctors in the Veterans' Administration, so that a continuity of work in the various veterans hospitals can be accomplished, not only in the medical service, but in various administrative capacities. However, a full veteran medical corps cannot meet the need, so that the problem must be solved by organized medicine in this country, cooperating with the Veterans' Administration.

General Hawley mentioned that there were a total of 83,000 beds now available in all existing veterans' hospitals. For these 3,600 doctors are needed to operate these beds and to fill medical positions in regionel offices. The administration now has 2,300, so that there is a 33 percent shortage. Of the 2,300 men, 1,700 are still in uniform, and a recent canvas of the 1,700 disclosed that only 35% desired to stay with the Veterans' Administration after the war. That means that this coming spring, there will be only one third the required number of doctors to carry the load at the present time, and that load is increasing daily with returning ship-loads of veterans.

The General expressed himself as displeased with the pressure groups which are trying to get the administration to take over every existing army and navy hospital built during the war, because many of these have been built in isolated places, where it would be impossible to get part time help to staff these units. He stated that it is now impossible to staff properly existing veterans' hospitals yet new ones must be built, in order to carry out the program of the Congress for the veteran. He would use beds in existing hospitals not government owned if he could get them, but these hospitals are now overly crowded. So, as he sees the situation, new beds will have to be built, and the General proposed to staff them with physicians in the private practice of medicine. He hopes to build beds near medical schools and centers, so that his institutions can be associated closely with the hospital and medical staffs of these private institutions. Then too, he hopes to get younger physicians returning from the services, men who have qualified by passing their specialty boards, and who are now interested in locating in places where an opportunity is available for replenishing financial resources. Many of these he hopes to hire on a part time basis, particularly when located conveniently to medical centers. Then, he hopes to provide residencies to other physicians whose education was interrupted, or who have not even started their qualifications for a board. Teaching facilities will be expanded in these veteran hospitals which are near teaching centers.

The above discussion discloses the questions, in part, for the hospitalization of veterans. Then what about the problems of outpatient care and treatments? This is an even more complex problem, with many legal obstacles to overcome, especially since the veteran is now entitled to outpatient treatment at government expense only for a service connected disability. This means that a service connected disability must then be established before treatment can be authorized.

Attempts were made to contract this outpatient business to private physicians following the first world war. Many of these designated physicians were political appointees, and scandals resulted. Collusion with patients were carried out, and fees were split for unnecessary treatments. So now, with the reorganization of the Veteran Administration, we cannot afford, either as an administration, or as a profession of medicine, to have scandals in outpatient treatment of the veteran. The answer, as the General sees it, should be for the veteran to have free choice of physician, and the veteran can have this free choice, if every qualified physician, ethically bound, accepts appointment by the Veterans' Administration. He called attention that the Administration cannot deal separately with over 125,000 physicians, so that now he is seeking ways and means of dealing with them thru respective state or county organizations, and since the physicians will have to do the work, the administration should be willing to deal with them largely on their own terms. The general stated further that he wants the veteran to have adequate treatment, but no more than he needs, and to meet this requirement, medical groups should set up the necessary control over the medical service, and to provide effective policing of it, so that neither the veteran, the doctor, nor the government will be defrauded. In connection with the operation of the outpatient service, the government, thru the veterans' administration, will set up administrative offices in connection with the county or state medical agencies, or with various states existing prepayment medical service plans. In this manner, most of the administrative work connected with service to the veterans can be taken from the medical men, and at the same time, will provide an agency which can quickly determine service connection and authorize outpatient treatment.

In the concluding remarks of the General, he delighted the House with his remarks when he said that, altho he had spent thirty years in a highly organized government service of medicine, he would deeply regret a government control of the medical profession, alluding indirectly to the recent overtures made in congress by the Truman Compulsory Health Insurance bill. He stated that we could establish this great organized profession of medicine in the esteem of the people of this country in no greater degree than for the medical profession to get together with the newly organized veteran administration, in order to attack the momentous problem of care of the injured veteran. In that manner, we can show our people that a free and unregimented and ungoverned profession can solve the problem, and that it is not necessary for the government to tell the medical profession how to run its business. The General stated that he was committed to only one principle- that the veteran receive the best in American medicine. He cannot support any program which denies him the best in medicine, and he is quite sure it will be a long time before we find the best in American Medicine, in any quantity at least, in other than in the civil practice of medicine.

I shall next discuss the manner in which the House of Delegates expressed its opposition to federal compulsory sickness insurance as proposed by the Wagner-Murray Dingell bill, and to the extraordinary proposals made by Senator Pepper in his bill for maternal and infant care.

The President's program includes five features. The first is to grant federal aid for the building of hospitals and health centers thru the nation. The Board of Trustees has approved the principles of the Hill-Burton bill, and the House of Delegates endorsed this action as being within the program of constructive action toward improving the health of the American people.

In respect to the W.M.D. bill, and the present super E.M.I.C. bill 1318, the conference unanimously disapproved, and called upon the members of the entire medical profession for personal disapproval. The conference report called attention to the fact that the Children's Bureau has repeatedly announced that the

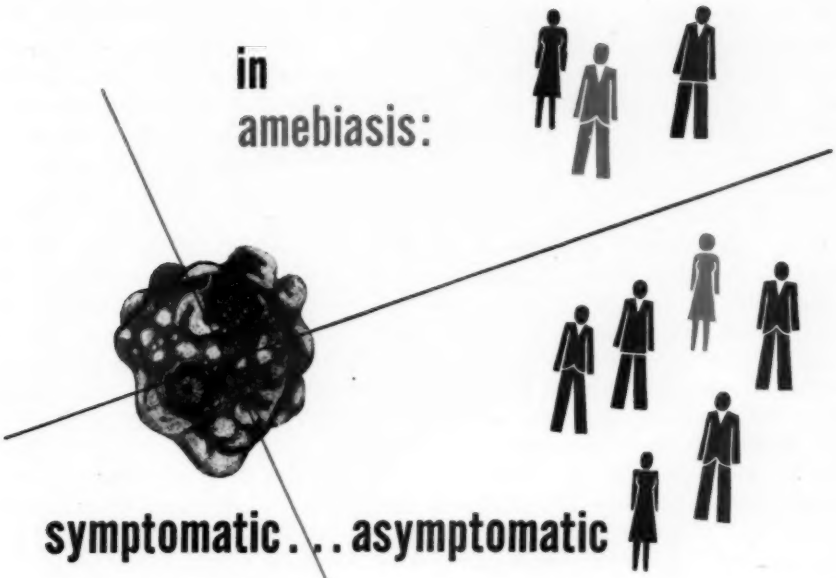
E.M.I.C. would be completed six months after termination of the war, and that we feel that the object of this program has been attained, accomplished thru the cooperation of the medical profession. The need for this emergency measure has now diminished in importance. It seems, however, that a definite move is now underway by S. bill 1318, (Pepper bill) to continue this program and provide for its application to the people of the entire U. S., with widened scope and expanded power centralized in the Children's Bureau. *We feel that this plan should not now have expanded application thruout the U. S. because; 1. There is no real need for the continuation and expansion of this wartime measure. 2. Such compulsory plans are not consistent with good care, excellence of service or American principles. 3. The inclusion of children until the age of 21 years is not required and their medical needs can be met more efficiently in other way. And, 4., no health work or medical service that can be rendered by a state or any of its political subdivisions should be administered or controlled by the federal government, or any federal bureau. Therefore, the House of Delegates resolved that the present Medical Advisory Committee to the Children's Bureau is not truly representative of the medical profession, and that any program of that bureau must be administered thru the state medical association, which should be represented.* The House further resolved that the present advisory and steering committees to the Children's Bureau should be abolished, and a new committee be established which shall consist of one representative from each state medical association to be designated by that association, and representatives from such other organizations as have a direct interest in the functions of the Children's Bureau selected by these organizations. The House resolved further that the Children's Bureau is not properly related to the Deprtment of Labor, and should be transferred to the Federal Security Agency until such time as all health and medical activities of the government are segregated into a single department of health, with a secretary, who is a doctor of medicine, in the president's cabinet. The House adopted further resolutions in connection with the above E.M.I.C. proposals by designating the Secretary of the A.M.A. to forward copies of the fourteen point program of the American Medical Association, together with all adopted resolutions at our conference, to the Children's Bureau and the Federal Security Agency, so that they would know our policies and conclusions on the medical economics of maternal and child welfare. Further resolutions emphasized to the proper government authorities that funds appropriated by Congress for health and medical services for use in the separate states should be integrated with the state medical associations so that our societies would have some control over expenditures. Every state association is urged to place before its representatives in Congress the defects in the above bills, the harm that will result in their enactment, the dangers resulting from compulsory central government measures, then to emphasize the medical policies favored.

The third feature of the President's message dealt with the development of the National Research Foundation. The House supported the opinion of the Board of Trustees, the Committee on Postwar Medical Service, the Council on Medical Education and Hospitals, and the reference committee on legislation that the control of the National Research Council should be placed under a scientific board of directors, as proposed by the Magnuson bill in Congress, rather than under an individual director to be appointed by the President.

The fifth proposal is compensation for the loss of earnings due to sickness. The American Medical Association, thru its House of Delegates has consistently favored such insurance.

Finally, the other proposal of the President and the main feature of the W.M.D. bill is to create a federal system of compulsory sickness insurance. The House of Delegates registered its disapproval of this section of the proposals for the following reasons: *1. The W.D.B. is founded on the false assumption that the solution of the medical care problem of the American people is the panacea for all the troubles of the needy. 2. This is the first step in a plan for general socialization not only of the medical profession, but of all professions, industries, business and labor. 3. Positive proof exists from experience in other countries that inferior medical service results from compulsory health insurance. 4. A program such as outlined is enormously expensive. It will result in greatly increased taxes for the entire population of the United States. 5. Voluntary prepayment*

in amebiasis:



symptomatic . . . asymptomatic

Barr[1] states: ". . . it is just as important to treat properly the symptomless 'carrier' of this parasite as to treat the patient suffering from amebic dysentery."

Stitt, Clough and Clough[2] report, "The disease may be symptomless . . . These mild or symptomless cases have been shown to outnumber greatly the cases with clinical dysentery. They constitute the carriers or 'cyst-passers'."

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1. *Barr, D. P.: Modern Medical Therapy in General Practice, 2:1830, Baltimore, Williams & Wilkins Company, 1940.*
2. *Stitt, E. R.; Clough, P. W., and Clough, M. C.: Practical Bacteriology, Haematology and Animal Parasitology, ed. 9, Philadelphia, P. Blakiston's Son & Co., 1938, pp. 410-412.*

SEARLE *Research in the Service of Medicine*

medical plans now in operation in many parts of the United States, and which are rapidly increasing in number will accomplish all the objects of this bill with far less expense to the people, and under such plans the public will receive the highest type of medical care without regimentation.

Thereafter, the House of Delegates adopted two resolutions of paramount importance, as its answer and proposed solution in opposition to the W.M.D. bill. The first of these deal with the expansion of premedical care plans. The resolution adopted, presented by the Council on Medical Service and Public Relations, called attention to the fact that voluntary prepaid medical care programs, sponsored and operated by the medical profession in many parts of the country, are providing the means whereby millions of persons are able to obtain good medical care and hospital service on a budgeted basis, that this service is being rendered on a basis that is satisfactory to both patient and physician. There are now forty-seven voluntary plans in operation in twenty-four states, and many other states now in the process of developing such plans. These voluntary prepayment plans are based on the intrinsic American principles of personal initiative and personal responsibilities, therefore these plans, on a voluntary basis, are to be preferred, in the interest of the peoples health, to compulsory care under political control. The resolution adopted by the House of Delegates urged the encouragement of the development of a national voluntary prepayment medical care plan for the purpose of covering areas not now served by any plan, so that it can assist in the enrolment in local plans of national enrolment groups, and to serve until such time as all states have their own plans. The resolution adopted in connection with this proposal further stipulated that the American Medical Association's Council on Medical Service and Public Relations be instructed to take immediate steps to: *1. Coordinate the activities of all prepayment medical care plans now in operation. 2. Foster the development of such plans in those areas where there are none. 3. Educate physicians and the public as to the functions of voluntary prepayment plans and the need for supporting them, and 4. To encourage the officers and committees of every state medical society to secure prompt action by their state societies in inaugurating new or increasing benefits of existing prepayment medical care programs in every state.*

Another resolution considered favorably called for the creation of a National Health Congress. This proposal called attention to the fact that existing bill in Congress would federalize and socialize the health services of this country and would regiment doctors of medicine, dentists, nurses, hospitals, pharmacists and the people whom they serve, and that the medical and allied health professions are interested in bringing the greatest amount of health protection to all the people of this nation, and that this cannot be accomplished thru compulsory health insurance. So, these groups, being interested in bringing the greatest amount of health protection to all people in this nation, are interested in preserving the quality of health care for the people, therefore, they favor voluntary nonprofit prepayment plans instead of health services under compulsory governmental control. So, in spite of the fact that these individual groups in the field of health have their own organization, working independently for the preservation of the American system of health care, it would be well to create an overall body or council in order to integrate the necessary collective thinking and activity of all these organizations or units.

Therefore, the House of Delegates, recognizing the serious need of developing a working laisson or congress of all agencies in the health field to secure the most effective results of action and public education, adopted a resolution approving such a coordinating body as mentioned above. The resolution adopted stipulated further that the Council on Medical Service and Public Relations should take the initiative in bringing together the interested groups to organize and incorporate immediately a National Health Congress, this congress to undertake to bring to all the people of this nation the complete benefits of modern medical-dental science and the finest hospital facilities, to arrange for budgeting the cost of such service at monthly rates within the financial means of all Americans thru voluntary, nonprofit health plans and to work speedily for the institution of such voluntary nonprofit health plans in those places or localities where they do not now exist.

Other important matters suggested in the

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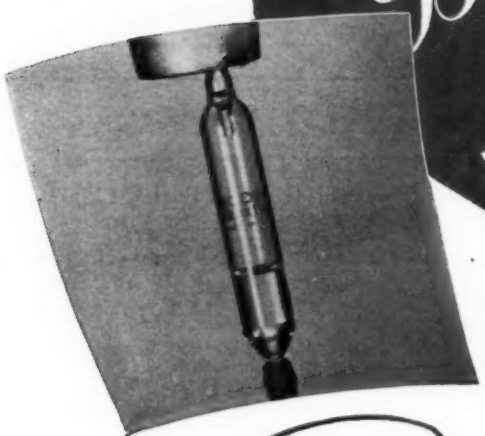

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Report of the Council on Medical Service and Public Relations were endorsed by the House.

1. In Public Relations work, it is important to utilize all dignified approachments to the public by which the public may have a clear understanding of the work of organized medicine. The utilization of community health conferences have proved valuable, and the utilization of professional public relations councils on a national, state and county level is approved.

2. Under the item of medical care for the American people, the House stressed the importance of the Article of Dr. Louis H. Bauer, member of the Board of Trustees, which appeared in the December 1st issue of the A.M.A. Journal. This article stresses particularly the importance of sustained production in this country, which leads to better living conditions, improved housing, nutrition and sanitation which are fundamental to good health, section 4, dealing with the development in or extension of voluntary sickness insurance plans; section 7, dealing with federal aid to states where definite need is demonstrated, administered on a state basis with the help and advice of the medical profession, section 10, dealing with discharge of physicians from the armed forces as rapidly as is consistent with the post war effort, section 12, dealing with adoption of federal legislation to provide for adjustments in draft regulations which will permit students to prepare for and continue the study of medicine, and section 12, dealing with the postponement of consideration of revolutionary changes while such a large number of men and women are still in the armed forces. The above items are part of the fourteen point program of the A.M.A. adopted for the guidance of medical policies in this emergency.

In connection with the fundamental work of the American Cancer Society, the House approved of the work done by the Council on Medical Service in connection with conferences had with the Cancer Society pertaining to certain of its rules and regulations. Standards taken from these resolutions clearly defined a cancer detection center, or cancer prevention, or well person clinic is designed to detect abnormalities no producing symptoms sufficient to send the patient to a doctor. These clinics do not diagnose or treat disease, and 2- no such clinics shall be established in any community without the consent of the county medical society.

It is becoming apparent that this report is becoming somewhat long. There were many other items of business conducted by the House, those dealing with the reception of the addresses and reports of the officers, and the various Councils. To review these would be altogether too time-consuming. To any of these, I would refer you to recent issues of the A.M.A. Journal for full reports.

Respectfully submitted,
J. D. HAMER, M. D.

Staff Meetings

ST. JOSEPH'S HOSPITAL

January 10, 1946

1. Statistics of St. Joseph's Hospital for the Month of December 1945—Dr. James Coffey.
2. Case of Aplastic Anemia—Dr. Robt. Phillips.
3. Case of Tracheo-Esophageal Fistula—Dr. D. Melick.
4. Eight Cases of Congestive Heart Failure Apparently Precipitated by Influenza—Dr. Thos. Munson.

February 8, 1946

1. A New Method of Treating Carbuncles—Dr. Thos. H. Bate.
2. A Technical Cause for False Positive Cephalin Flocculation, by Miss Mary Theo Maze—Dr. J. Coffey.
3. Case of Carcinoma of the Stomach—Dr. Thos. Munson.

MARICOPA COUNTY MEDICAL SOCIETY

January 7, 1946

1. Experiences in the European Theater of Operations—Dr. Thomas Woodman.
2. Report of the Delegate to the American Medical Association Convention—Dr. Jesse Hamer.

February 4, 1946

Two Films:

1. The Physiology of Anoxia, The Basis of Inhalational Therapy.

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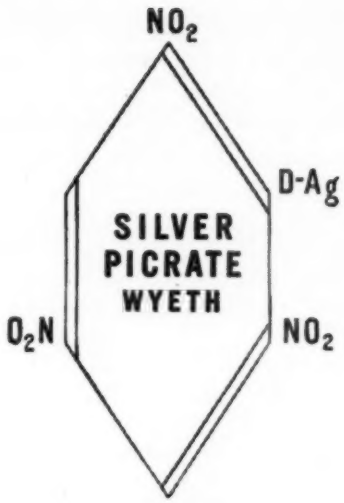

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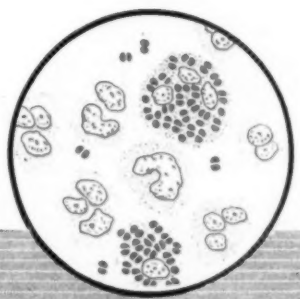

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2. The Oxygen Therapy Procedures.
Discussion on the Mechanics of Oxygen Therapy.

Introduced by Dr. Benjamin Herzberg.

Presented by Mr. Evern Saville of Linde Air Products Company.

GOOD SAMARITAN HOSPITAL
STAFF MEETING

January 28, 1946

1. Review of Deaths and Autopsies—Dr. Robert Antos.
2. "Subacute Bacterial Endocarditis" with Case Report—Dr. S. K. Conner.

ST. MARY'S HOSPITAL, TUCSON
February 19, 1946

1. Carcinoma of Splenic Flexure of the Colon—Dr. N. K. Thomas.
2. Interesting Case of Polyhydramnios—Dr. F. C. Gregg.

ST. MONICA'S HOSPITAL
February 15, 1946

1. Improved Treatment of Syphilis by Penicillin—Dr. Paul S. Armour.
2. Case of Spinal Cord Tumor—Dr. D. J. Condon.

ARIZONA CHAPTER
AMERICAN COLLEGE OF CHEST PHYSICIANS MEETING

May 1, 1946
Westward Ho Hotel, Phoenix, Arizona

1:30 P. M.

Carcinoma of the Lung—Dr. John C. Jones, Los Angeles, Cal.

Pulmonary Pathology in Heart Disease—Dr. Robert Flinn, Phoenix, Arizona

Synergism between Mycotic and Tuberculous Infections of Lungs—Dr. Alvis E. Greer, Houston, Texas

Bronchoscopy in Pulmonary Disease—Dr. E. J. Nagoda, Tucson, Arizona

Non Medical Aids in Bronchial Asthma-Dr. Duane Carr, Memphis, Tenn.

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THOMAS T. FROST, M. D. PATHOLOGIST
DOUGLAS D. GAIN, M. D.

HOURS 9:00 to 5:00
SATURDAY AFTERNOONS AND SUNDAYS EXCEPTED

6:30 P. M.

Dinner Meeting and Xray Diagnosis of Unusual Films

Diagnosticians:

Dr. John Jones
Dr. Warner Watkins
Dr. Duane Carr
Dr. Edward Hayden
Dr. Alvis Greer

8:00 P. M.

Lobectomy and Pneumonectomy in Pulmonary Tuberculosis—Dr. John C. Jones

Noxious Gases and Bronchiectasis—Dr. Duane Carr

Non Malignant Tumors of the Thoracic Cavity—Dr. Alvis E. Greer

Business Meeting

SHARP & DOHME ANNOUNCES TWO RESEARCH GRANTS

A grant of $5,000 was made to the Department of Gynecology, Tulane University, New Orleans, La., in support of clinical research conducted by Dr. C. Gordon Johnson.

A $2,200 grant was directed to Columbia University, College of Physicians and Surgeons, New York City, in support of Dr. Erwin Brand's work on proteins.

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Potency of 0.5 mg. Bottles of 100

MEDICO-LEGAL SECTION

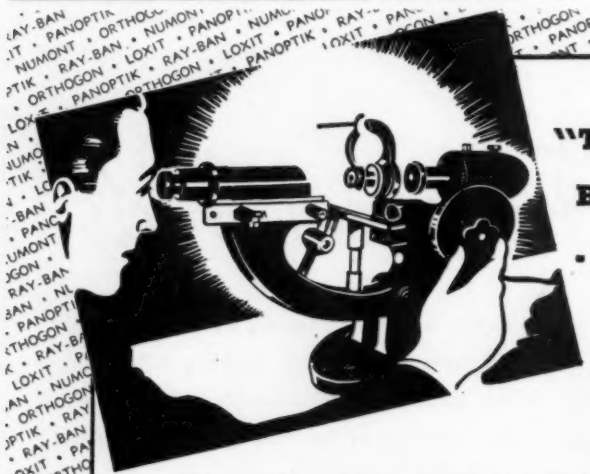
IN THE SUPREME COURT OF THE STATE OF ARIZONA

Failure of Employee to report Accident or Injury forthwith, does not relieve Employer of Liability for Medical Care.

Respondent (applicant) Smith was an employee of petitioner Consolidated Vultee Aircraft Corporation which was insured against liability, pursuant to the provisions of the workmen's compensation law, by its co-petitioner Eagle Indemnity Company.

About eight o'clock on the morning of April 3, 1944 applicant was descending from the "nose-hole opening", four feet by four feet in dimensions, of a B-24 bomber. In letting himself down, his foot missed the wheel used for support and he dropped down suddenly a short distance. He noticed an acute pain in his left groin, so severe that he was compelled to crawl out of the ship and sit down for approximately three-quarters of an hour. He thought it to be a gas pain, and did not go for first aid. The condition continued to bother him from that time on. He resumed work, however, without mentioning his pain or discomfort to his foreman, and continued to do his usual work. About May 9 he told a fellow employee that he had been suffering pain in his lower abdomen. On May 15, while working at a bench adjusting radio receivers weighing about forty-five pounds each, which he had to lift up and down from the bench, he stooped over to lift one of them down. In the act of lifting, he felt a severe pain in his lower left groin, similar to the one suffered April 3, but a great deal more severe. He made no report to first aid, and did not communicate the occurence to his foreman or to anyone in authority. That night he noticed a lump in his left groin. On May 17 he told another fellow employee that he wasn't feeling well and was going to take off. He did not mention in this conversation or the prior conversation with the former employee that his abdominal pains were due to an injury by accident.

On May 19 applicant was examined by his family doctor to whom he disclosed, in substance, the incidents above mentioned. This



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examination disclosed the presence of a left inguinal hernia. An operation was performed on May 21. Prior to this operation, and on May 20, he made a trip to the Consolidated Vultee plant, checked his tools, and talked to his foreman, stating that he would need a leave of absence for the operation and convalescence, but did not mention any injury. Applicant returned to work on July 5, and for the first time reported to his foreman the incidents of April 3 and May 15.

The employer's report was then filed with the Industrial Commission. The commission at first denied compenstion, but later, on rehearing, entered an award for accident benefits covering the period of disablement, including medical benefits.

Petitioners have appealed, and contest the award on two grounds: First, that the applicant's proof wholly failed to disclose that the hernia suffered by him was compensable under the provisions of section 56-959 (b), ACA 1939; second, that the commission could not legally excuse the failure of the applicant to report forthwith to the employer where the employer's rights are prejudiced by his failure to report.

The hernia involved in this action is of the class mentioned in subdiv. (b) of sec. 56-959, supra. We have reviewed the evidence in the case, and in our opinion the commission was justified in finding the existence of the first three elements mentioned in the section which must constitute the basis of compensability. The immediate cause, from the testimony, appears to have been a severe strain received in the course of employment. It seems obvious that the descent of the hernia occurred at least immediately following the incident of May 15, since the doctor's examination three days later disclosed the presence of the hernia. It is admitted that the strain was accompanied by severe pain in the hernial region, both on April 3 and My 15.

This court has had occasion to review a similar hernia case. In Arizona Grocery Co. v. Meier, 61 Ariz. 317, 149 Pac. 2d 274, the applicant, while loading meat, slipped and strained himself. He felt a pain in the region of the groin but did not think much about it, and continued to work. He appears to have advised no one of the strain and pain until a week or ten days thereafter. The award in his behalf was upheld by this court. In that case, we did

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not in terms say what meaning should be given to the word "immediately" as used in the statute, either in reference to the descent of the hernia or the communication made to others.

Insofar as the descent of the hernia is concerned, and taking into consideration that the descent was evidently the effect of two causes, that of the drop of April 3 and the lifting of May 15, we are satisfied that the proof, as a matter of law, disclosed that the hernia immediately followed the cause. On the evening of May 15, the applicant noticed the protrusion in his groin. Within a few days medical examination disclosed this to be a hernia. We think the statute means simply that the hernia descended soon enough and in such a manner as to make it appear clear that the descent was the effect of the strain and pain complained of which forced the applicant to abandon his work after May 15. Frank A. McBride Co. Inc., v. Kuehn, 11 N. J. Misc. 764, 168 Atl. 64. The phrase "descent of the hernia occurred immediately following the cause" is given a liberal construction in favor of the injured workman. Maryland Cas. Co. v. Robinson, 149 Va. 307, 141 S. E. 225; Ussery v. Erlanger Cotton Mills, 201 N. C. 688, 161 S. E. 307; 71 C. J. 621, sec. 373, Workmen's Compensation Acts.

We have repeatedly held that the workmen's compensation law and its various provisions are to be construed liberally in favor of the injured workman. Kay v. Hillside Mines, Inc., 54 Ariz. 36, 91 Pac. 2d 867.

There was no immediate communication by applicant of the incident of April 3. The record discloses that nothing was said by him until about May 9 when he complained to a fellow workman of abdominal pain. However, it appears that within a day or two after the strain caused by the lifting on May 15 and the pain he suffered at that time, applicant contacted his doctor and communicated to a fellow workman that he was suffering from a pain in the groin or abdomen. The record would justify the commission in finding that on May 19 he advised his doctor of the incidents of April 3 and May 15. The question is, does this evidence comply with the statute which provides that the facts of the strain, the severe pain in the hernial region, and the descent of the hernia shall be "communicated immediately to one or

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more persons''? In Black's Law Dict., 3d Ed. page 919, the word ''immediately'' is defined as follows:

> '' 'It it impossible to lay down any hard and fast rule as to what is the meaning of the word ''immediately'' in all cases. The words ''forthwith'' and ''immediately'' have te same meaning. They are stronger than the expression ''within a reasonable time,'' and imply prompt, vigorous action, without any delay, and whether there has been such action is a question of fact, having regard to the circumstances of the particular case.' ''

In Howell v. Gaddis, 31 N. J. Law 313, it was said:

> ''The word 'immediately' does not, in legal proceedings, necessarily import the exclusion of any interval of time. It is a word of no very definite signification, and it is much in subjection to its grammatical connections.''

For all practical purposes, in dealing with the word ''immediately,'' as used in statutes and in agreements, the courts have construed the term as meaning within a resonable time, taking into consideration all of the facts and circumstances of the particular transaction. Vol. 20 Words and Phrases, Perm. Ed. 124, et seq.

The commission is the fact-finding body. It had the opportunity to see and hear the witnessess. It was for the commission to determine whether, under all the facts and circumstances, compliance was made with the fourth ground of the statute. The evidence taken in its most favorable light would justify a finding that the communication was made in conformity with the law.

This court has repeatedly passed upon the question raised by petitioners' second ground: The failure of the applicant to report the accident and injury forthwith, and the right of the commission to excuse such failure to so report, as provided in section 56-966, ACA 1939. We can add nothing to what has already been said in Maryland Cas. Co. v. Ind. Com., 33 Ariz. 490, 266 Pac. 11; Hartford Acc. etc. Co. v. Ind. Com., 43 Ariz. 50, 29 Pac. 2d 142; Paramount Pictures Inc. v. Ind Com., 56 Ariz. 217, 106 Pac. 2d 1024; and Arizona Grocery Co. v. Meier, supra. In each of these cases claims similar to that here urged by petitioners were resented to this court and rejected. Upon the

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authority of these cases we are constrained to hold that the commission, under the evidence in this case, properly relieved applicant of his failure to forthwith report the injury. Nor does it appear that petitioners were prejudiced by the failure of the applicant to report forthwith. Mass. Bonding & Ins. Co. v. Arizona Concrete Co., 47 Ariz. 420, 56 Pac. 2d 188.

The award is affirmed.

Southwestern Dermatological Society

For some considerable time the desire for a dermatological society serving the southwest has been felt by those doctors interested in skin diseases. Such a society was organized and the inaugural meeting was held at the Westward Ho Hotel, in Phoenix, Arizona, on April 15th, 1944 and was attended by Dr. Leslie Smith of El Paso, Texas, and Doctors Clohessy, Medigovich, Jekel and Rogers of Phoenix. It was decided upon to call this newly formed group the Southwestern Dermatologicl Society and a subsequent listing of this society was made in the Archives of Dermatology. The officers elected were Dr. Louis Jekel, president, through whose efforts this meeting was made possible, and Dr. G. K. Rogers, secretary.

It was further decided at this meeting that the members consist of those doctors in the southwestern part of the United States who practice dermatology exclusively or who are actively interested in dermatology It is the purpose of this society to hold combined business and clinical meetings once or twice a year in conjunction with the Arizona State Medical and the Southwestern Medical Society meetings. It is the hope of the members that patients can be presented at these meetings and discussions held on these cases which will prove profitable to both patient and doctor.

With the resumption of peace the activities of the Southwestern Dermatological Society will again begin to function and the next meeting will be held on the morning of May the second in Phoenix at the time of the Arizona State Medical meeting.

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